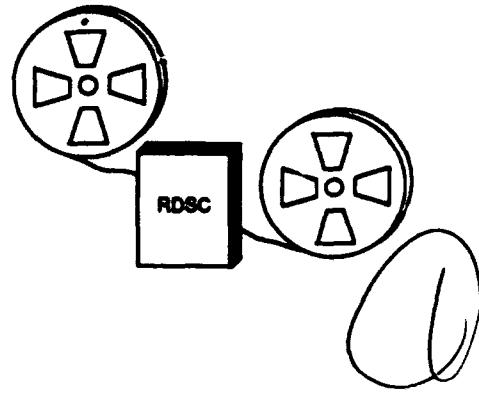


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The Reliability Sourcebook

**"How and Where to Get R&M
Data and Information"**

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distribution is unlimited

RDSC (Reliability Sourcebook)

94-12205



RAC

Reliability Analysis Center
A DoD Information Analysis Center

94 4 20 201

The Reliability Sourcebook

**"How and Where
To Get R&M
Data and Information"**

1993

Prepared by:

**Reliability Analysis Center
201 Mill St.
Rome, NY 13440-6916**

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This publication was developed to fill the need for a single, consolidated reference to sources of reliability data and information. Many of the inquiries received by the Reliability Analysis Center (RAC) are concerned with whether a certain type of reliability data exists and how and where it can be obtained. While various bibliographic publications do exist, there has been no convenient source document consolidating information about all types of data sources - books, periodicals, organizations, on-line databases, etc. covering both military and industrial/commercial arenas. This publication is intended to provide a ready source for this type of information.			
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The information and data contained herein have been compiled from government and nongovernment technical reports and from material supplied by various manufacturers and are intended to be used for reference purposes. Neither the United States Government nor IIT Research Institute warrant the accuracy of this information and data. The user is further cautioned that the data contained herein may not be used in lieu of other contractually cited references and specifications.

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The Reliability Analysis Center (RAC) is a Department of Defense Information Analysis Center sponsored by the Defense Technical Information Center, managed by the Rome Laboratory (formerly RADC), and operated by IIT Research Institute (IITRI). RAC is chartered to collect, analyze and disseminate reliability information pertaining to systems and parts used therein. The present scope includes integrated circuits, hybrids, discrete semiconductors, microwave devices, optoelectronics and nonelectronic parts employed in military, space, industrial and commercial applications. The scope of the reliability activities include the related disciplines of Maintainability, Testability, Statistical Process Control, Electrostatic Discharge, and Total Quality Management.

The data contained in the RAC databases are collected on a continuous basis from a broad range of sources, including testing laboratories, device and equipment manufacturers, government laboratories and equipment users (government and industry). Automatic distribution lists, voluntary data submittals and field failure reporting systems supplement an intensive data solicitation program. Users of RAC data are encouraged to submit reliability data to RAC to enhance these data collection efforts.

Reliability data and analysis documents covering most of the device types mentioned above are available from the RAC. Also, RAC provides reliability consulting, training, technical and bibliographic inquiry services which are noted at the end of this document.

**REQUEST FOR TECHNICAL
ASSISTANCE AND INFORMATION
ON AVAILABLE RAC SERVICES AND
PUBLICATIONS MAY BE DIRECTED TO:**

**Reliability Analysis Center
201 Mill Street
Rome, NY 13440-6916**

Non-Technical Inquiries: (800) 526-4802
(315) 337-0900
Technical Inquiries: (315) 337-9933
TQM Inquiries: (800) 526-4804
TeleFax: (315) 337-9932

**ALL OTHER REQUESTS
SHOULD BE DIRECTED TO:**

**Rome Laboratory
Attn: Duane A. Gilmour
RL/ERSS
525 Brooks Rd.
Griffiss AFB, NY 13441-4505**

**Telephone: (315) 330-2660
Autovon: 587-2660**

FOREWORD

This publication was developed to fill the need for a single, consolidated reference to sources of reliability, maintainability and supportability (RMS) data and information. While various bibliographic publications do exist, there has been no convenient source document consolidating information about all types of data sources - books, periodicals, organizations, on-line databases, etc. - covering military, industrial, commercial and professional societies. This publication is intended to provide a ready source for this type of information.

While it would be virtually impossible to identify all sources of RMS information and data, an attempt has been made in this publication to identify those sources which are the most readily available and most helpful to the assurance technology practitioner. This document is organized into four chapters:

- Chapter 1 Organizations - Government, military, professional, and educational groups which support reliability and quality disciplines.
- Chapter 2 Publications - Proceedings, journals, newsletters, periodicals, and books containing reliability data and information.
- Chapter 3 Databases - Automated and semi-automated databases containing component and system reliability data.
- Chapter 4 Electronic Bulletin Boards - On-line resources for reliability information exchange.

The data sources listed cover a broad spectrum. Some focus on DoD needs; others serve a limited segment of the industrial community. Access to some data sources is restricted, while others are open to any and all users. Some sources are available at no cost to the user, while others charge the user for their information. Where possible these distinctions have been made in the text. No matter what specific information needs you may have, this text will tell you how to get the information you need.

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APPENDIX A: RAC PRODUCTS

CHAPTER ONE - ORGANIZATIONS

DOD INFORMATION ANALYSIS CENTERS

Twenty-four IACs are supported by the Department of Defense. These centers are generally contractor-operated and managed. Base funding and administrative management is provided by the Defense Technical Information Center (DTIC) with supplemental funding provided through user fees. Each IAC receives technical guidance from one or more DoD laboratories or agencies with leading competence in the center's particular field of science and technology.

The centers generally offer the following types of products and services for their particular field of specialization:

- Abstracts, indexes, and bibliographic searches of technical documents.
- Authoritative responses to user technical inquiries.
- Preparation and distribution of technical documents, including data compilations, engineering handbooks, reports on new technologies, and other reference works.
- Publication of periodic newsletters and reviews to improve the current awareness of the technical community.
- Execution of special studies and tasks as specified and funded by users.
- Administrative and technical support to technical committees and conferences to solve problems, coordinate technology programs, and promote technical information exchange.

The following is a list of each IAC and the phone number to contact for technical information.

- Aerospace Structures Information and Analysis Center (ASIAC) (513) 255-6688
- Ceramics Information Analysis Center (CIAC) (317) 494-9393
- Chemical Propulsion Information Agency (CPIA) (410) 992-7300
- Chemical Warfare/Chemical Biological Defense IAC (CBIAC) (301) 676-9030
- Costal Engineering Information Analysis Center (CEIAC) (601) 634-2012
- Cold Regions Science and Technology Information Analysis Center (CRSTIAC) (603) 646-4221
- Concrete Technology Information Analysis Center (CTIAC) (601) 634-3271
- Crew System Ergonomics Information Analysis Center (CSEIAC) (513) 255-4842
- Data and Analysis Center for Software (DACS) (315) 734-3696
- DoD Nuclear Information Analysis Center (DASIAC) (703) 960-4774
- Guidance and Control Information Analysis Center (GACIAC) (312) 567-4587
- Hydraulic Engineering Information Analysis Center (HEIAC) (601) 634-2608
- High Temperature Materials Information Analysis Center (HTMIAC) (317) 494-9393
- Infrared Information Analysis Center (IRIA) (313) 994-1200
- Metals Information Analysis Center (MIAC) (317) 494-9393
- Metal Matrix Composites Information Analysis Center (MMCIAC) (805) 963-6497
- Manufacturing Technology Information Anaysis Center (MTIAC) (312) 567-4732
- Nondestructive Testing Information Analysis Center (NTIAC) (512) 263-2106

- Plastics Technical Evaluation Center (PLASTEC) (201) 724-4222
- Pavement and Soils Trafficability Information Analysis Center (PSTIAC) (601) 634-2734
- Reliability Analysis Center (RAC) (315) 339-7087
- Soil Mechanics Information and Analysis Center (SMIAC) (601) 634-3376
- Survivability/Vulnerability Information Analysis Center (SURVIAC) (513) 255-4840
- Tactical Technology Center (TACTEC) (614) 424-7010

Reliability Analysis Center (RAC)

The Reliability Analysis Center (RAC), original publisher of RDSC document, is one of the 24 Information Analysis Centers supported by the Department of Defense. Each center serves as a clearinghouse for available information pertaining to a particular specialized technical subject area of concern to the military and to industry. The Reliability Analysis Center focuses on reliability, maintainability, and quality.

RAC personnel collect, analyze, synthesize, format and disseminate reliability information on electronic systems and on the microcircuit, discrete semiconductor, and electromechanical components that make up these systems. System and component design, the manufacturing process, and logistics support are addressed to improve the reliability and quality of fielded systems. RAC activities span the entire system life cycle:

- Application of reliability physics knowledge, design assessment and predictive techniques, and component history information to system design.
- Assessment of designed-in testability and maintainability in light of a system's proposed maintenance support structure.
- Assistance with Total Quality Management to optimize manufacturing.
- Collection, organization, and analysis of qualification test and field failure data.
- Feedback of field experience to bring about needed engineering changes and improved logistics support.

Critically analyzed and evaluated reliability experience information is distributed through reliability data compilations, technical handbooks, and special publications. RAC instructors present standard or specially-tailored training courses in both open-enrollment and closed sessions. In addition, RAC provides engineering consulting under service charge arrangements directly to government agencies, defense contractors, and other interested parties, bringing RAC's accumulated reliability experience to bear on specific customer problems.

Contact:

Reliability Analysis Center
201 Mill St.
Rome, NY 13440-6916
Michael J. Rossi (Deputy Director)

Telephone: (315) 339-7087

DSN: 587-4151

FAX: (315) 337-9932

Data and Analysis Center for Software (DACS)

Software Engineering and Software Engineering Technology - DACS supports the development, testing, validation, transition and use of software engineering technology. DACS subject areas encompass software engineering technology. DACS subject areas encompass software engineering methods, practices, techniques, tools, guides, and standards; acquisition management; Ada and other programming language techniques and methods; software life cycle development— including requirements definition, design, coding, integration, testing and acceptance; software failures; test methodologies; software quality metrics and measurements; reliability and cost modeling; standards and guides for software development and maintenance; software engineering techniques and tools; and software technology research, improvements, and training.

DACS DATABASES

- Software Engineering Bibliographic Database (SEB)
- Robotics and Artificial Intelligence Database (RAID)
- Software Engineering Research Projects Database (SERP)
- Software Life Cycle Experience Database (SLED)
- Software Engineering Tools Information Database (SETI)

SEB contains collected citations from texts, technical reports, journals, periodicals and proceedings on a wide variety of software engineering topics. The RAID and SERP databases contain project information on R&D projects in the fields of robotics, artificial intelligence and software engineering. SLED contains software life cycle data relevant to software reliability, software errors, faults and failures, software cost and productivity, and post development programs. SETI contains information on tools indexed by data elements such as operating systems, target systems, output, and implementation languages used to support the software development and maintenance process. Subsets of all data are available in hard copy and magnetic form.

PRODUCT AND SERVICE INFORMATION

The User's Guide to DACS Products and Services (DACS GUIDE) provides an introduction to DACS, an overview of DACS specialty databases, a description of DACS products and services, a description of DACS special studies, and information on ordering DACS products and services. The User's Guide to the Robotics and Artificial Intelligence Database (RAIDGUIDE) explains the contents and requirements for access to RAID information. Detailed information on the contents and access requirements to DACS software engineering bibliographic data is contained in the User's Guide to the Software Engineering Bibliographic Database (BIBGUIDE). DACS provides and transitions laboratory-developed software engineering tools such as the Ada Compiler Evaluation Capability (ACEC) and the Ada Compilation System (ACS). It also produces and distributes specialized software engineering reports and technical assessments and current awareness publications such as the DACS Bulletin and Quarterly Newsletter. The specialized guides and the information package are free of charge to DACS users upon request.

Contact:

Data and Analysis Center for Software
Kaman Sciences Corporation
P. O. Box 120
Utica, NY 13503
Attn: Jim Reed (Technical Director)

Telephone: (315) 734-3668
FAX: (315) 734-3699

Crew System Ergonomics Information Analysis Center

Crew system ergonomics information is scientific and technical knowledge and data concerning human characteristics, abilities, limitations, physiological needs and tolerances, performance, body dimensions, biomechanical dynamics, and physical strength. It also includes engineering and design data concerning equipment intended to be used, operated, maintained or controlled by members of military crews in sea, land, air, and space environments. Subject areas include, but are not limited to: acquisition of information through visual, auditory and other senses; information storage and retrieval; attention allocation; perceptual organization; human language processing; operator motor control; effects of environmental stress; and operational workload, and control and display interfaces (real and virtual). Various information products will be developed including the following: handbooks and data books; state-of-the-art reports; critical reviews; technology assessments; research directories, abstracts, and indexes; and currents awareness bulletins. In addition, CSERIAC offers a variety of services including: responding to technical and bibliographic inquiries, providing support for revision and development of military standards and

specifications, and maintaining and implementing computer based models of human operators. CSERIAC sponsors symposia, workshops, conferences, colloquia, and short courses to apprise scientists and engineers of important developments in crew system ergonomics and to provide opportunities for professional development.

Contact:

CSERIAC Program Office
AL/CFH/CSERIAC
Wright-Patterson Air Force Base
Dayton, OH 45433-6573
Attn: Dr. Lawrence Howell (Associate Director)

Telephone: (513) 255-4842
DSN: 785-4842
FAX: (513) 255-4823

Nondestructive Testing Information Analysis Center (NTIAC)

Techniques and Process - All Nondestructive Testing (NDT), Nondestructive Evaluation (NDE), and Nondestructive Inspection (NDI), utilizing techniques and processes involving material-energy interaction phenomena whereby a material, component or an entire system can be so characterized as to reliability, predict its presence, or performance under a prescribed service regime. Radiographic, holographic, acoustic, magnetic and other related phenomena are within the NTIAC scope. The use of nondestructive sensors for manufacturing and materials process control, and for intelligent or adaptive control applications, is also within the purview of NTIAC. Other information of concern to NTIAC includes economic aspects of the NDE industry, economic considerations with respect to selection of techniques and processes; industry trends in applying current NDE technologies in research and development, production, maintenance, safety monitoring, failure prevention of in-service material, and life assurance. As a national resource of NDTDE/NDI technology, NTIAC will provide fast reaction time to service inquiries for analysis, especially where field and military systems are involved or where potential failure or quality situations may arise. In addition to providing customized literature searches on NDT/NDE/NDI, NTIAC has a variety of state-of-the-art reports available on specialized NDE topics and copies of conference proceedings for NDE Symposia held in San Antonio since 1969. NTIAC receives guidance from the Tri-Service Nondestructive Testing Steering Committee and supports the Committee on Materials (COMAT) Working Group on NDVE.

Contact:

NTIAC
Texas Research Institute-Austin
415A Crystal Creek Drive
Austin, TX 78746-6201
Attn: Dr. George Matzkanin (Director)

Telephone: (512) 263-2106
FAX: (512) 263-3530

Supportability Investment Decision Analysis Center (SIDAC)

At the present time, SIDAC is not a formal part of the DoD IAC program. However, valuable services may be obtained from this facility in the areas of logistics and supportability.

Contact:

Supportability Investment Decision Analysis Center (SIDAC)
5100 Springfield Pike, Suite 311
Dayton, OH 45431-1231
Attn: Steven Schenk (Director)

Telephone: (513) 258-6720
BBS: (513) 258-6766

OTHER GOVERNMENTAL ORGANIZATIONS**Government-Industry Data Exchange Program (GIDEP)**

The GIDEP (Government-Industry Data Exchange Program) is a cooperative activity between government and industry seeking to reduce or eliminate duplicate expenditures of time and money by making maximum use of existing knowledge. The program provides a means to exchange technical data essential in the research, design, development, production and operational phases of the life cycle of systems and equipment. Primary objectives are to improve reliability, quality, productivity, safety, and logistics support.

GIDEP is chartered on behalf of the Joint Logistics Commanders and provides for full interaction of government and industry activities. By the Commanders' agreement, the Navy provides executive management for the program. The Program Manager exercises overall authority over the planning, direction and management of GIDEP. He is located within the Office of the Assistant Secretary of the Navy (S&L), Washington, DC.

GIDEP participating organizations are: the United States Army, Navy, Air Force, Marine Corps, Defense Logistics Agency, General Services Administration, National Aeronautics and Space Administration, Federal Aviation Administration, Department of Energy, U.S. Postal Service, National Bureau of Standards, and the National Security Agency as well as the Canadian Department of Defence and includes hundred of industrial organizations. Participating activities included:

- Prime and major subcontractors
- Government acquisition and support activities
- Original equipment manufactures
- Commercial-industrial companies
- Consultant firms which support government and industry
- Educational institutions having reliability-maintainability curriculum (including engineering)
- Public and private utilities
- Canadian Department of National Defence and members of Canadian industry

Any activity which uses or generates the types of data GIDEP exchanges may be considered for membership. Classified or proprietary information is not included in GIDEP. Participants may have access to any of the following four data interchanges:

- Engineering Data Interchange
- Failure Experience Data Interchange
- Reliability-Maintainability Data Interchange
- Metrology, Data Interchange

The Engineering Data Interchange (EDI) contains readily available engineering and quality data which spans the complete range of technical disciplines. It includes engineering reports on such diverse subjects as energy, computer software, mathematics, materials, mechanics and metallurgy. Engineering and quality assurance test reports are available for materials, mechanical and electronic components and parts. Specifications are included for nonstandard and military drawing parts and materials as well as original equipment manufacturer source control specifications. Also included are technical reports from the Department of Energy.

The Failure Experience Data Interchange (FEDI) contains objective failure information generated when significant problems are identified on parts, components, processes, equipment, materials, specifications or safety hazards. This data interchange includes Alerts and Safe-Alerts, failure analysis and problem information data and diminishing manufacturing source data. The initiator of an Alert coordinates the Alert with the manufacturer (vendor), when applicable, then forwards it to the GIDEP Operations Center for distribution to

all participants in the Failure Experience Data Interchange. Safe-Alerts describe problems usually related to finished products which could have impact on the safety of personnel or risk of damage to facilities or equipment.

A Diminishing Manufacturing Sources and Material Shortages category provides information on items being discontinued from production, or companies going out of business. This precludes designing obsolescent items into new equipment, and for existing equipment permits a timely response, such as procurement of a lifetime buy.

The Reliability-Maintainability Data Interchange (RMDI) contains failure rate/mode and replacement rate data as well as mean-time-to-repair data on parts, components, equipments, systems and materials based on field performance information and/or reliability demonstration tests of equipment, subsystems and systems. RMDI also contains reports on theories, methods, techniques and procedures related to reliability and maintainability practices.

The Metrology Data Interchange (MDI) contains metrology related engineering data on test systems, calibration systems, measurement technology, test equipment calibration procedures and technical manuals. The MDI has been designated as a data repository for National Institute for Standards and Technology (NIST) Metrology related data.

SPECIAL AREAS

The Urgent Data Request (UDR) system permits any participant with a specific technical problem to rapidly query the scientific and engineering expertise of all participating activities. A UDR form is initiated by the member and sent to GIDEP Operations Center for distribution to all participants. Responses are provided directly to the person making the query and are also incorporated into the appropriate data interchange.

A Department of Defense (DoD) Value Engineering Data Information and Storage System (VEDISARS) has been implemented within GIDEP to collect, process and make available DoD accepted Value Engineering Proposals (VEPs) and Value Engineering Change Proposals (VECPs).

GIDEP has a data retrieval system which is accessible by remote computer terminal. Participants using a remote terminal may search for needed data with one or more parameters such as part number, manufacturer, document title or descriptors. Data retrieved by the computer include abstracts and the microfilm or microfiche locations of the complete reports of interest. Full participants may then retrieve the full text of the data from the microfilm or microfiche files maintained by their local GIDEP representative. Partial participants must request the source document from the Operations Center.

The information available from GIDEP can be profitably applied in every step of system design, development, production and support. Design engineers will find a ready source of proven parts information to meet specific applications; the approved and nonstandard parts information can be of great value during the design parts selection process. Reliability engineers find the failure rate and mode information valuable in R&M predictions, and the safety and failure experience information may preclude costly system failures and accidents. Logistics engineers use GIDEP information in projecting support and resupply requirements. Production engineers may find new and innovative techniques and technology to improve productivity and reduce production costs. In addition, the Roster of GIDEP Representatives makes available a large number of contacts in virtually every technical area.

MEMBERSHIP REQUIREMENTS

To maintain and increase the value of GIDEP, all activities must submit all relevant data. Each activity must provide resources and equipment for implementing an internal program to include at least one representative, and microfilm and microfiche equipment to read and/or print as appropriate. Adequate working area within the facility is needed and access to a computer terminal is highly recommended. A short annual progress report is required from all participants to enable GIDEP management to access the effectiveness of the program. GIDEP participants are not charged any fees.

Although many organizations participate voluntarily, some government contracts require that contractors participate in GIDEP. Contractors may be required to participate in accordance with MIL-STD-1556B, a contract clause, or a statement of work. In DoD and NASA organizations, participation in GIDEP may be mandatory through application of one of the following regulations:

- Army AMC Regulation 70-56
- Navy OPNAV instruction 5200.29
- Air Force Regulation 810
- NASA Management Instruction 5310.2

Contact:

GIDEP Operations Center
PO Box 8000
Corona, CA 91718-8000

Telephone: Verbal Help Desk: (909) 273-4677
Computer Help Desk: (909) 736-4543
DSN: 933-4677
FAX: (909) 273-5200

National Technical Information Service (NTIS)

NTIS is the central source for research, development, and engineering documents prepared by Federal agencies, their contractors or grantees, or by special technology groups. NTIS operates on a cost recovery basis and consequently charges a nominal fee for its publications. Services and products are available without restriction. Documents are ordered by a unique "AD" number. An on-line bibliographic search capability for NTIS documents is available from several commercial on-line data services.

NTIS provides subscribers with a periodic bulletin containing abstracts of new reports or documents of continuing interest. A free product and services catalog is available. For a free copy of the NTIS Products and Services Catalog, write or call (703) 487-4650 and ask for PR-827. The Catalog includes the current price schedule and NTIS order form.

Contact:

National Technical Information Service (NTIS)
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

Telephone: Technical Reports

- Regular Service (703) 487-4650
- Rush Service 1(800) 553-NTIS

FAX: (703) 321-8547

Subscriptions: (703) 487-4630

Computer Products: (703) 487-4763

Title Identification: (703) 487-4780

Order Tracing: (703) 487-4660

Defense Technical Information Center (DTIC)

DTIC serves as a clearinghouse for technical reports generated or contracted for by DoD agencies. DTIC also handles documents received from NASA, Department of Energy, Department of Transportation, by voluntary contribution, or by special agreement with foreign governments.

DTIC acquires, stores, retrieves, and disseminates scientific and technical information to support DoD research, development, engineering, and studies programs. DTIC services are available to the DoD and its contractors and to other U. S. government organizations and their contractors. Organizations may also be eligible for services under various special programs for academic or equal opportunity business support.

Detailed information on how to register to receive DTIC notices and to obtain access to its products and services is given in DTIC document DTICH 4185.1,

Handbook for Users, APRIL 1989. Also available is a directory of DoD Information Analysis Centers (IACs).

An on-line interactive query capability is available to qualified users.

Contact:

Defense Technical Information Center (DTIC)
Bldg. 5, Cameron Station
Alexandria, VA 22304-6145

Telephone:

Bibliographies: (703) 274-6867 or DSN 284-6867
Cataloging: (703) 274-6804 or DSN 284-6804
Development Office: (703) 274-5367 or DSN 284-5367
DTIC Digest (orders): (703) 274-6871 or DSN 284-6871
General Information: 1-800-225-DTIC
Identification of Technical Reports: (703) 274-7633 or DSN 284-7633
Library: (703) 274-6833 or DSN 284-6833
Limited Documents: (703) 274-6985 or DSN 284-6985
Nonprint Products: (703) 274-6804 or DSN 284-6804
Ordering Documents: (703) 274-7633 or DSN 284-7633
Registration for General Services: (703) 274-6871 or DSN 284-6871
Registration for On-line Services and Inquiries: (703) 274-7709 or DSN 284-7709
To leave a message during non-business hours: (703) 274-6811 or DSN 284-6811

Defense Logistics Studies Information Exchange (DLSIE)

DLSIE collects, organizes, stores and disseminates information relating to the DoD logistics study effort and logistics management documentation that may be of interest to the Defense community. It provides searches of the Studies data base and the Models data base, makes secondary distribution of DLSE documents (identified by LD number) through the use of microfiche, and selective dissemination of information (SDI) for authorized users. DLSE products and services are available to authorized users only. This includes DoD components, other Federal agencies and DoD contractors and grantees. The contractors and grantees must submit requests in writing through channels for certification of need-to-know. DLSE's authority is found in DoD Instruction 5154.19. Each military service and DLA have issued implementing directives to this instruction: Air Force Regulation 400.51, Army Regulation 5 7, Secretary of the Navy Instruction 4000.32, and Defense Logistics Agency Regulation 4100.1.

Contact:

Defense Logistics Studies Information Exchange (DLSIE)
U.S. Army Logistics Management College
ATTN: ATSZ-DL
Fort Lee, VA 23801-6043

Telephone: (804) 765-4007 or 4039
DSN: 539-4007 or 4039

Naval Publications and Forms Directorate

The Naval Publications and Forms Directorate is the central DoD source for:

- Military and Federal Specifications
- Military and Federal Standards
- Military Handbooks
- QPLs, QMLs, etc.
- DoD adopted Industrial Documents (Issued to DoD only)
- DoD Index of Specifications and Standards (DODISS)

Contact:

Naval Publications and Forms Directorate (NPFD)
5801 Tabor Ave.
Philadelphia, PA 19120-5099

Telephone:

General assistance (215) 697-2179
Ordering documents:
DoD only: (215) 697-2626
Industry: (215) 697-3217
FAX: (215) 697-2978
Autowon: 442-2179

DOD AGENCIES**Air Force "R&M 2000" Program**

R & M 2000 is a program within the Air Force dedicated to improving the *operational performance over time* of weapons systems by procuring systems designed to fail less often and be easier to repair and return to service. This program had its origin in 1984 and was institutionalized by Air Force top management in 1986.

Contact:

AF Special Assistant for R&M
Headquarters USAF/LE-RD
Washington, DC 20330-5130

Rome Laboratory (RL) Reliability Directorate

The Rome Laboratory is a major Air Force R & D facility. Within RL, the Reliability directorate coordinates or participates in many Air Force reliability-related programs, including reliability standards and specification development efforts, reliability data collection and failure analysis for Air Force systems, development and publication of technical reports and handbooks, reliability support for system design and procurement programs, etc.

Contact:

Rome Laboratory
RL/ER
Attn: John Bart, Chief Scientist Reliability Sciences
525 Brooks Rd.
Griffiss AFB, NY 13441-4505

Telephone: (315) 330-3064
DSN: 587-3064

U. S. Air Force Avionics Systems Center

This Avionics Systems Division office is the central point of contact for the Avionic/Electronic Integrity Program (AVIP). The purpose of this program is to improve the reliability of aircraft avionics systems by specifying life cycle requirements such as environments, material characteristics, design criteria, damage tolerance, maintenance conditions, and quality engineering. These guidelines are described in MIL-A-87244A, "Avionic/Electronic Integrity Program Requirements."

Contact:

ASC/ENASV
Wright-Patterson AFB, OH 45433

Telephone: (513) 255-2170

Navy "Best Practices" Program Office

The Best Practices Approach is a thrust within the Navy to improve the effectiveness of technical procurements, as described in a book called "Best Practices" published by the program office. The entire life cycle of a system development is addressed, including design, test, production, and logistics.

Contact:

Program Overviewer or
W.J. Willoughby Jr.
US Navy
Crystal Plaza #5, Rm 348
OASN(RDA)
Washington, DC 20360-5000

Best Manufacturing Practices Program
Office of Naval Research Technology
Directorate (341)
Attn: Mr. Ernie Renner
Arlington, VA 22217-5660
Telephone: (703) 696-8482
FAX: (703) 696-8480

Army "Reliability Initiatives" Program Office

This Army office coordinates programs to improve the reliability of Army systems.

Contact:

Edmund J. Westcott
Asst. Department of Staff
US Army Materiel Command
AMCRD-I
5001 Eisenhower Ave.
Alexandria, VA 22333-0001

Telephone: (703) 274-9850
DSN: 284-9850

PROFESSIONAL ORGANIZATIONS**Institute of Electrical and Electronic Engineers (IEEE) Reliability Society**

The Reliability Society is an organization of IEEE members with a professional interest in product assurance operating within the IEEE framework. The Society is concerned with reliability and quality, the effectiveness of processes, hardware, systems, and software, and related topics such as product liability. Any IEEE member can become a member of the Reliability Society by paying an annual membership fee of \$8.00. Members automatically receive the IEEE Transactions on Reliability and the annual proceedings for both the R&M Symposium and the Reliability Physics Symposium.

Contact:

IEEE Headquarters or
345 East 47 St.
New York, NY10017-2394

Telephone: (212) 705-7900

IEEE Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331

Telephone:

Outside the US: (908) 981-0060
Inside the US: (800) 678-IEEE
FAX: (908) 981-9667

American Society for Quality Control (ASQC) Electronics and Reliability Divisions

The American Society for Quality Control is the world's oldest and largest professional organization devoted specifically to the advancement of quality. The ASQC offers a formal professional certification program in five quality-related areas including reliability. Any ASQC member can become a member of the Reliability or the Electronics Division by paying the annual Division membership fee of \$8.00. Members receive the IEEE Transactions on Reliability and the annual proceedings for both the R&M Symposium and the Reliability Physics Symposium.

Contact:

American Society for Quality Control
611 East Wisconsin Ave.
PO Box 3005
Milwaukee, WI 53201-3005

Telephone: (800) 248-1946
in Wisconsin (414) 272-8575
FAX: (414) 272-1734

Electrical Overstress/Electrostatic Discharge (EOS/ESD) Association

The primary field of interest of the EOS/ESD Association is the advancement of the theory and practice of electrical overstress avoidance, with emphasis on electrical discharge phenomena. The organization promotes the exchange of technical information and develops and promulgates standards for testing, materials, protective devices and procedures.

Contact:

EOS/ESD Association, Inc.
Norstar Building
200 Liberty Plaza
Rome, NY 13440

Telephone: (315) 339-6937

Society of Reliability Engineers (SRE)**Contact:**

Society of Reliability Engineers
4359 Lindeil Blvd.
St. Louis, MO 63108

Society of Logistics Engineers (SOLE)

Reliability, maintainability, and quality are of key importance during operation and maintenance of a fielded system. This area is a major concern of the Society of Logistics Engineers.

Contact:

Society of Logistics Engineers
8100 Professional Place
Suite 211
New Carrollton, MD 20785-2225

Telephone: (301) 459-8446

Society of Automotive Engineers (SAE) International RMS Committee (G-11)

SAE is the only international, non-profit professional organization society dedicated to advancing the technical and managerial excellence of mobility engineers and related professions. SAE conducts seminars, workshops, symposia and conferences and publishes monthly magazines, technical books, papers and standards. SAE's 60,000 plus members from 83 countries are involved in all aspects of the design manufacture and support of self-propelled vehicles and their components.

Cost-effective and high-quality products are required to compete in the emerging global marketplace. Reliability, Maintainability, and Supportability (RMS) are major factors in producing a competitive product. The Society of Automotive Engineers (SAE) RMS Committee (G-11) is an international RMS initiative for increased contribution to cost-effective product development, manufacturing and support through technology, education and training, communications and liaison, specifications and standards and best practices.

G-11 was formed in February 1986, and currently has representatives from 90 organizations representing a broad sector of government, industry and academia. It is a working committee with specific projects under the guidance of subcommittee chairman.

Contact:

Mr. Jay D. Myers
Society of Automotive Engineers
SAE International
400 Commonwealth Dr.
Warrendale, PA 15096-0001

Telephone: (412) 776-4841

Dr. Jerrell T. Stracener
Mgr. Product Support Tech.
Aircraft Division
LTV Aerospace & Defense Co.
PO Box 655907, MS 194 65
Dallas, TX 75265-5907

Telephone: (214) 266-0883
FAX: (214) 266-2672

Institute of Environmental Sciences (IES)

The Institute of Environmental Sciences is a professional society of engineers, scientists, and educators simulating, testing, controlling and teaching about the environments of earth and space. The IES is known for its support of environmental testing and evaluation of methods for testing at the piece part and assembly level.

Contact:

Institute of Environmental Sciences
940 East Northwest Highway
Mount Prospect, IL 60056

Telephone: (708) 255-1561

International Electrotechnical Commission (IEC)

The IEC is the world-wide authority for electrical and electronic engineering standards. The IEC works in cooperation with the International Standards Organization (ISO) which covers non-electrical fields. Together these organizations represent countries comprising over 80% of the world's population. Of special interest to the reliability community is IEC Technical Committee 56 on Reliability and Maintainability.

Contact in the USA:

American National Standards Institute, Inc.
1430 Broadway
New York, NY 10018

Telephone: (212) 642-4900

Contact in Europe and the rest of the world:

ISO
1 Rue de Varembe
Case Postale 56
CH 1211 Geneva, Switzerland

Electrical Power Research Institute (EPRI)

The mission of EPRI is to transfer innovations in science and technology to applications in the utility industry by:

- Creating, integrating, and interpreting scientific and technical information and databases.
- Accelerating the commercial availability of products and system response to the needs of the industry.
- Providing technical support to member organizations in the planning, procurement, operation and maintenance of electrical supply systems.

Contact:

EPRI Corporate Communications
3412 Hillview Ave.
Palo Alto, CA 94304

Telephone:

To Place Orders: (415) 934-4212
To Answer Questions: (415) 855-2000

The American National Standards Institute (ANSI)

ANSI information technology standards provide nationally agreed-upon solutions to a wide range of information technology problems. These standards were developed primarily under the guidance of voluntary nonprofit organizations, such as the Computer and Business Equipment Manufacturers Association (CBEMA) and the Institute of Electrical and Electronics Engineers (IEEE). These groups voluntarily submit standards to ANSI for approval.

ANSI represents the United States as a member of ISO. It participates in ISO's entire technical program, holds the secretariats of 280 technical committees and subgroups, and is represented on ISO governing bodies.

Contact:

American National
Standards Institute (ANSI)
Customer Service
11 West 42nd Street
New York, NY 10036

Telephone: (212) 642-4900
FAX: (212) 302-1286

British Standards Institute (BSI)

The world's first national standards body, the British Standards Institute (BSI) was incorporated by royal charter in 1929. Today it is comprised of four organizations: BSI Standards, BSI Testing, BSI Technical Help to Exporters and BSI Quality Assurance. All are linked by a common cause - to promote quality in the interests of industry and consumers.

BSI Standards is the UK voice in European and world standardization, promoting industry and consumer's viewpoints and providing information about changes that will affect them. BSI Testing comprises 22 laboratories equipped to test a wide range of industrial and consumer products against published standards and company specifications. BSI Technical Help to Exporters advises members on the current technical requirements of countries throughout the world and BSI Quality Assurance is responsible for operating the Registered Firm Scheme.

BSI represents the United Kingdom as a member of the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC) and the European Committee for Standardization (CEN).

Contact:

British Standards Institute (BSI)
Customer Information
Linford Wood
Milton Keynes
MK14 6LE, England

Telephone: +44 908 221166
FAX: +44 908 320856

European Committee for Standardization (CEN)

The European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC), and the European Telecommunications Standards Institute (ETSI) are responsible for standardization activity in Europe.

These three groups formed the Information Technology Steering Committee (ITSTC) to coordinate and monitor the preparation of European information technology standards, including telecommunications standards. The ITSTC's first priority is to promote Open Systems Interconnection (OSI) standards in Europe. Developed by the International Organization for Standardization (ISO), OSI standards permit the interconnection of both similar and disparate computer systems.

CEN members include 18 national standards organizations of countries belonging to the European Communities and the European Free Trade Association.

Contact:

European Committee for Standardization
Central Secretariat
Rue de Stassart, 36
B-1050 Brussels
Belgium

Telephone: + 32 2 519 68 11
FAX: +32 2 519 68 19

International Organization for Standardization (ISO)

The International Organization for Standardization (ISO) is a worldwide federation of standards bodies with over 90 members. ISO's mission is to promote or standardization and related activities throughout the world to facilitate the international exchange of goods and services. and develop cooperation in the sphere of intellectual, scientific, technological and economic activity.

ISO's technical work is carried out in a hierarchy of some 2,600 technical committees, subcommittees and working groups in which more than 20,000 experts from all parts of the world participate. To date, ISO has published over 7,700 standards.

ISO standards are voluntary; they are inter-industry agreements in non-regulated spheres of economic activity. National voluntary standards are often direct adoptions of ISO standards, even though such adoptions are also voluntary. Voluntary standards may also be used in regulated spheres of economic activity, at the discretion of the regulator involved.

ISO cooperates with other international and regional organizations. It prepares standards for magnetic and optical media, software engineering, electronic data interchange. application portability. programming languages, computer graphics. microprocessor systems. interfaces, security techniques and multimedia/hypermedia.

Contact:

International Organization for Standardization (ISO)
Central Secretariat
1, Rue de Varembe
CH-1211 Geneva 20
Switzerland

Telephone: +41 22 749 0111
FAX: +41 22 733 3430

National Institute of Standards and Technology (NIST)

The National Institute of Standards and Technology (NIST) was established by the United States Congress "to assist industry in the development of technology .. needed to improve product quality, to modernize manufacturing processes, to ensure product reliability .. and to facilitate rapid commercialization .. of products based on new scientific discoveries."

A principal agency of the Commerce Department's Technology Administration, NIST has as its goals: to aid U.S. industry through research and services, to contribute to the public health and safety, and to support the U.S. scientific and engineering research communities.

The National Computer Systems Laboratory (NCSL) is one of NIST's major science and engineering research components. NCSL's programs seek to overcome barriers to the efficient use of computer systems, to the cost-effective exchange of information and to the protection of valuable information resources in computer systems. NCSL's technical work is carried out in five divisions: Information Systems Engineering Division, Systems and Software Technology Division, Computer Security Division, Advanced Systems Division, and Systems and Network Architecture Division.

Contact:

National Institute of Standards and Technology (NIST)
Gaithersburg, MD 20899

Telephone: (301) 975-2000

COMMERCIAL ORGANIZATIONS

Global Information Services - Global Engineering Documents

Global Engineering Documents is a licensed reprinting facility for domestic, foreign national, and international societies and institutions. Among other services offered, Global sells the same DoD documents that are available from Naval Publications, but guarantees much faster delivery. Next day delivery and facsimile service is available. All specifications and standards are available in microfilm or microfiche form as well as in hard copy.

Contact:

Global Engineering Documents
1990 M Street N.W., Suite 400
Washington, DC 20036

Telephone: (800) 854-7179 or (202) 429-2860

INFONORME - London Information (ILI)

London Information is the European distributor for a number of U. S. publishers and government agencies including Department of Defense (DoD), National Technical Information Service (NTIS), American National Standards Institute (ANSI), Institute of Electrical and Electronic Engineers (IEEE), American Society of Mechanical Engineers (ASME), and the Reliability Analysis Center (RAC). There are over 70,000 different titles in stock. The organization also maintains a database, available on CD-ROM, containing bibliographic details of all the western world's standards. About 155,000 standards are included from all major issuing authorities in the U. S., together with all major industrialized countries, including Japan, Canada, Australia, and all European countries.

Contact:

Peregrine Rowse, Director
INFONORME - London Information (ILI)
Index House Ascot
Berks SL5 7EU, United Kingdom

Telephone: 44 (0) 344-23377

UNIVERSITIES WITH AN R&M CURRICULUM**University of Maryland**

A program leading to M.S. and Ph.D. degrees in Reliability Engineering is offered. A broad range of interdisciplinary research activities are also available.

Contact:

Mr. Manfred Wuttig
Director
Materials and Nuclear Eng. Unit
University of Maryland
College Park, MD 20742-2115

Telephone: (301) 405-5208

Dr. Herbert Rabin
Director and Associate Dean
Engineering Research
Reliability Engineering Center
University of Maryland
College Park, MD 20742-2115

Telephone: (301) 405-3887

University of Arizona

This university has long offered a M.S. Degree in Reliability Engineering. The University's Videocampus Division provides videotapes of most courses, enabling candidates to satisfy most degree requirements within their own organizations.

Contact:

Dr. Dimitri Kececioglu
University of Arizona
Aerospace and Mechanical Engineering Dept., Bldg No. 16
7340 N. LaOesta
Tucson, AZ 85704-2495

Telephone: (602) 621-2495 or (602) 621-6120

Air Force Institute Of Technology (AFIT)

AFIT offers a Systems Engineering Masters Degree with a reliability specialization. The institute also offers 16 hours of engineering post graduate study in Professional Specialized Education for R&M, as well as an assortment of graduate and Professional Continuing Education reliability courses in engineering and management. Courses offered are primarily for DoD personnel, but contractor personnel may attend on a space-available basis if attendance is certified as beneficial to the DoD.

Contact:

Dr. Roland Kankey
Head of Department Quantitative Management
Air Force Institute of Technology
AFIT/LSQ
Wright-Patterson AFB, OH 45433-6583

Telephone: (513) 255-7771 X3251

DSN: 785-7771 X3251

U. S. Army Management Engineering College (AMEC)

Reliability and Maintainability courses are offered, although AMETA does not offer a degree program. Courses are primarily for DoD personnel, but contractor personnel may attend on a space-available basis if attendance is certified as beneficial to the DoD.

Contact:

Army Management Engineering College (AMEC)
Commandamt
AMEC
Attn: AMXOM-QSAT
Rock Island, IL 61299-7040

Telephone: (309) 782-0506

DSN: 793-0506

CHAPTER TWO - PUBLICATIONS

SYMPOSIA WITH PUBLISHED PROCEEDINGS

Reliability and Maintainability Symposium (RAMS)

The annual R&M Symposium is the premier forum for system and equipment level R&M information exchange. It is sponsored by 10 different professional societies and is held at various locations throughout the U. S. in late January. The symposium also includes tutorial sessions.

Contact the IEEE Reliability Society at:

IEEE Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331

Telephone:

Outside the US: (908) 981-0060
Inside the US: (800) 678-IEEE
FAX: (908) 981-9667

or contact the ASQC Electronics or Reliability Division at:

American Society for Quality Control
611 East Wisconsin Ave.
PO Box 3005
Milwaukee, WI 53201-3005

Telephone: (800) 248-1946 in Wisconsin (414) 272-8575
FAX: (414) 272-1734

**Back copies of symposium proceedings can be ordered from:
RAMS c/o Evans Associates
804 Vickers Ave
Durham, NC 27701-3143**

International Reliability Physics Symposium – IEEE

The International Reliability Physics Symposium (IRPS) emphasizes device reliability as a dominating influence in the development of new part technologies and circuit designs. The symposium concentrates on the role of design, processing, packaging, and testing for building in high reliability and focuses on new techniques and tools for failure analysis. The symposium is held at various locations throughout the U. S. in late March or April. Tutorial sessions are also included.

For proceedings or information contact the IEEE Reliability Society at:

IEEE Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331

Telephone:

Outside the US: (908) 981-0060
Inside the US: (800) 678-IEEE
FAX: (908) 981-9667

Annual Technical Meeting - IES

The Institute of Environmental Sciences annual technical meeting and equipment exposition is held each May. IES also holds periodic workshops on Environmental Stress Screening and publishes proceedings from these workshops.

Contact:

Institute of Environmental Sciences
940 East Northwest Highway
Mount Prospect, IL 60056

Telephone: (708) 255-1561

FAX: (708) 255-1699

"Reliability and Maintainability in Computer-Aided Engineering" - IEEE Reliability Society Workshop

This annual workshop, held each fall, is aimed at assuring that reliability and maintainability needs are adequately addressed when the capabilities of engineering workstations are being defined. CAE capabilities are needed by design engineers to design in features satisfying R&M requirements during the design process. CAE is also used by R&M specialists for independent reliability analyses and reviews.

Contact the IEEE Reliability Society at:

IEEE Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331

Telephone:

Outside the US: (908) 981-0060
Inside the US: (800) 678-IEEE
FAX: (908) 981-9667

International Reliability - Availability - Maintainability Conference for the Electric Power Industry (Inter-RAM)

This conference deals specifically with the unique reliability, availability and maintainability concerns of the electric power industry. The conference is held in various locations throughout the U. S. in May or June.

Contact:

Mr. Roy R. Fray
Technical Program Chairman
SAIC, Suite 1250
160 Spear St.
San Francisco, CA 94105

Telephone: (415) 855-2441

Catalog of EIA and JEDEC Standards and Engineering Publications

This catalog contains EIA bulletins, publications, and Recommended Standards offered for sale. The JEDEC documents are developed by the Joint Electron Device Engineering Council (JEDEC) of EIA. Beginning in 1979, the abbreviation TEPAC (Tube Engineering Advisory Council) is used to identify EIA documents dealing with electron tubes. Documents adopted by the DoD community are stocked at Navy Publications and Forms Center, Philadelphia, PA.

Contact:

Electronic Industries Association (EIA)
Engineering Department
ATTN: Standard Sales Office
2001 Eye Street, N.W.
Washington, DC 20006

or

Global Engineering Documents
190 M Street, N.W. (Suite 400)
Washington, DC 20036

Telephone:

Local inquires: (202) 429-2860
Out of state call: (800) 854-7179

Computer-aided Acquisition and Logistic Support (CALS)

Computer-aided Acquisition and Logistic Support (CALS) is a United States Department of Defense (DoD) and industry strategy to transition from paper-intensive acquisition and logistic processes to a highly automated and integrated mode of operation. The objectives of the CALS program are to improve the timeliness, reduce the cost, and improve the quality of weapon systems and their supporting technical data. Achieving these objectives will lead to increased operational readiness and industrial competitiveness.

The purpose of the CALS standardization effort is to create a unified DoD/industry interface. CALS will facilitate data integration, exchange and access among DoD and industry maintained databases and eliminate the development of duplicate data. CALS will facilitate the transfer of logistic and technical information between industry and DoD by leveraging existing international and national standards, and accelerating the development and testing of new standards to support longer term requirements.

Contact:

National Institute of Standards and Technology (NIST)
Room B-106
Building 233
Gaithersburg, MD 20899

Telephone: (301) 975-2000

CALS(Computer-Aided Acquisition and Logistic Support) Technical Reports and Software All sources, Government and industry, including CALS/CE Industry Steering Group, PDES. Inc., National Technical Information Service

The CALS/CE Information Center is the central source of reliable, up-to-date information about CALS, concurrent engineering, PDES and related technologies.

Contact:

CALS/CE Information Center
5285 Port Royal Road
Springfield, VA 22161

Telephone: (703) 487-4650

Government Microcircuit Applications Conference (GOMAC)

This government-sponsored conference has been the setting for announcement of a number of major government microcircuit initiatives. Exchange of design, engineering, reliability, and standardization information relative to microcircuit applications is the principal objective of the annual GOMAC conference.

All sessions are ITAR-controlled; one session is classified. The conference alternates between the east and west coasts and is held in October or November.

Contact:

Ralph Nadell
Palisades Institute
201 Varick Street
New York, NY 10014

Telephone: (212) 620-3341

EOS/ESD Symposium - EOS/ESD Association

This symposium promotes the exchange of technical information on the theory and practice of the avoidance of electrical overstress, with specific emphasis on electrical discharge phenomena. It is held annually at various locations throughout the U. S. in late September or early October.

Contact:

EOS/ESD Association, Inc.
Norstar Building
200 Liberty Plaza
Rome, NY 13440

Telephone: (315) 339-6937

TECHNICAL REPORTS

Rome Laboratory (RL) Technical Reports

Rome Laboratory (RL) performs and contracts studies in the field of reliability, maintainability and testability. There are hundreds of technical reports published by RL which document the results of such studies. These reports may be obtained through DTIC or NTIS. An index of these documents is available from Rome Laboratory by calling (315) 330-4920. Reports published after 1990 will have the prefix RADC; reports published after 1990 will have the prefix RL.

Contact:

Rome Laboratory (RL) formerly Rome Air Development Center (RADC)
RL/ERS
525 Brooks Rd.
Griffiss Air Force Base, NY 13441-4505

Order from: DTIC Registered user:

Defense Technical Information Center (DTIC)
Bldg. 5, Cameron Station
Alexandria, VA 22304-6145
(703) 274-7633

All others: National Technical Information Service (NTIS)

5285 Port Royal Road
Springfield, VA 22161
(703) 487-4650

Telephone: RL/ERS: (315) 330-4920

RL Technical Reports: (315) 330-2235
RL Technical Library: (315) 330-7608

Operational Test and Evaluation (OT&E) Reports and Related Information

Many OT&E reports are classified, and most are limited distribution. Requests for release of specific reports should be addressed to the originator via DTIC using a DTIC Form 55. DTIC will obtain the necessary release authorization and will supply the report to the requester. OT&E Reports are information derived from Air Force or multiservice testing of major weapons and other systems as part of the overall acquisition process and are updated continuously. OT&E includes the following:

- Initial Operational Test and Evaluation (IOT&E)
- Follow-on Operational Test and Evaluation (FOT&E)
- Multiservice Test and Evaluation (MST&E)
- Operational Assessments (OA)
- Operational Utility Evaluations (OUE)

- Qualification Operational Test and Evaluations (QOT&E)
- Also information on the mission and history of the Air Force Operational Test and Evaluation Center (AFOTEC, formerly AFTEC)

For assistance in locating information, call the phone number shown above, or write to AFOTEC/RS, Kirtland AFB, NM 87117-7001. The Army, Navy, and Marine Corps have their own operational testing agencies.

Contact:

Defense Technical Information Center (DTIC)
Bldg. 5, Cameron Station
Alexandria, VA 22304-6145

Telephone:

DTIC (703) 274-7633, DSN 284-7633
AFOTEC (505) 846-2574,
DSN 246-2574

Navy Publications and Forms Directorate (NPDFD)

The mission of the Naval Publications and Forms Directorate to perform inventory management functions for Navy publications and forms; stock, issue and initially distribute Navy and Department of Defense printed matter and perform other assigned functions. Services are not available to the general public. Aviation Supply Office Naval Publications and Forms Directorate, 801 Tabor Avenue, Philadelphia, PA 19120-5099

Contact:

Aviation Supply Office
Naval Publications and Forms Directorate
5801 Tabor Avenue
Philadelphia, PA 19120-5099

Telephone:

General Orders: (215) 697-2626 - DSN 442-2626
Information: (215) 697-2626/2997 - DSN 442-2626/2997

NASA STIP - National Aeronautics and Space Administration/Scientific and Technical Information Program

This office is responsible for systematically collecting documents related to research and development in aeronautics and the space sciences - from government agencies, universities, research laboratories, corporations and commercial publishers in the United States and in more than 200 foreign countries. The acquisition and processing of the documents for this collection is performed through an exchange agreement with the European Space Agency

(ESA) and under contract with the American Institute of Aeronautics and Astronautics (AIAA) and the NASA Center of Aerospace Information (NASA/CASI, where the central computerized bibliographic database is maintained to research and development in aeronautics and the space sciences - from government agencies, universities, research laboratories, corporations and commercial publishers in the United States and in more than 200 foreign countries. The acquisition and processing of the documents for this collection is performed through an exchange agreement with the European Space Agency (ESA) and under contract with the American Institute of Aeronautics and Astronautics (AIAA) and the NASA Center of Aerospace Information (NASA/CASI, where the central computerized bibliographic database is maintained.

Contact:

NASA Scientific and Technical Information Program
Code JTT
National Aeronautics and Space Administration
Crystal City, VA

Telephone: (301) 621-0390

ASQC Quality Press Publications

A number of additional reliability textbooks which are currently available may be found in the ASQC Quality Press Publications Catalog.

Contact:

American Society for Quality Control
ASQC Quality Press
611 East Wisconsin Ave.
PO Box 3005
Milwaukee, WI 53201-3005

Telephone: (800) 248-1946

FAX: (414) 272-1734

Annual Department of Defense Bibliography of Logistics Studies and Related Documents

Available to DoD components, other Federal agencies and DoD grantees and contractors with a certified need-to-know. This publication is a catalog of current bibliographies of logistics studies and related documents (planned, in-process, and completed) of current interest to the Department of Defense. It is distributed automatically to defense components which perform or have responsibility for the supervision of logistics research and who have indicated an interest in receiving that catalog. Other governmental agencies and DoD contractors and

grantees may obtain copies upon request to DLSIE. The annual bibliography is supplemented by three quarterly publications in April, July, and October. The quarterly supplements contain citations and abstracts for each planned, in-process, or completed logistics study effort added to the DLSE data base since the publication of the annual bibliography and quarterly supplements serve the user more efficiently, the following six indexes are included in each publication for easy cross-referencing: table of contents, performing organization index, contractor index, subject category index, subject index, and logistics document (LD) index.

Contact:

Defense Logistics Studies Information Exchange (DLSE)
U.S. Army Logistics Management College
ATTN: ATSZ-DL
Fort Lee, VA 23801-6043

Telephone: (804) 765-4007

DSN: 687-4007

Annual DoD Catalog of Logistics Models

This publication is a catalog of current logistics modeling efforts (planned, in-process, and completed) of current interest to the Department of Defense. It is distributed automatically to defense components which perform or have responsibility for the supervision of logistics research and who have indicated an interest in receiving the catalog. Other governmental agencies and DoD contractors and grantees may obtain copies upon request to DLSE. It includes the following indexes: sponsor index, performing organization index, title index, acronym index, secondary coverage index, and specific models descriptors index.

Contact:

Defense Logistics Studies Information Exchange (DLSE)
U.S. Army Logistics Management College
ATTN: ATSZ-DL
Fort Lee, VA 23801-6043

Telephone: (804) 765-4007

DSN: 687-4007

David Taylor Research Center (DTRC) Publications

Contact:

David Taylor Research Center (DTRC)
Bethesda, MD 20084-5000

Defense Technical Information Center (DTIC)
Bldg. 5, Cameron Station
Alexandria, VA 22304-6145

National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22161

If not available from DTIC or NTIS, order from DTRC

Telephone:

DTIC: (703) 274-7633/DSN 284-7633

NTIS: (703) 487-4805/FTS 737 4805

DTRC: Technical Information Center Reference (301) 227-1309

DTRC: Reports Control (301) 227-1143

PERIODIC TECHNICAL JOURNALS

Transactions on Reliability - IEEE

The purpose of this professional journal is to advance theory and practice of the reliability discipline. **Transactions on Reliability** is published quarterly and is distributed free to members of the IEEE Reliability Society and the ASQC Electronics Division.

Contact the IEEE Reliability Society at:

IEEE Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331

Telephone:

Outside the US: (908) 981-0060

Inside the US: (800) 678-IEEE

FAX: (908) 981-9667

or contact the ASQC Electronics Division at:

American Society for Quality Control
611 East Wisconsin Ave.
PO Box 3005
Milwaukee, WI 53201-3005

Telephone: (800) 248-1946

in Wisconsin (414) 272-8575

FAX: (414) 272-1734

Reliability Review - ASQC

This quarterly review publishes papers on the management, engineering, and philosophic aspects of reliability, maintainability, quality, safety, and effectiveness of products, processes, and services. It also touches on related subjects such as product liability and risk management. The journal is distributed free to members of the ASQC Reliability Division. Non-members may also subscribe.

Contact the ASQC Reliability Division at:

American Society for Quality Control
611 East Wisconsin Ave.
PO Box 3005
Milwaukee, WI 53201-3005

Telephone: (800) 248-1946 in Wisconsin (414) 272-8575
FAX: (414) 272-1734

The Journal of Environmental Sciences - IES

This is the official bimonthly publication of the IES. The journal includes technical reports covering environmental testing and evaluation of methods for testing at the piece part and assembly levels.

A subscription is included with membership. Nonmembers may also subscribe.

Contact:

Institute of Environmental Sciences
940 East Northwest Highway
Mount Prospect, IL 60056

Telephone: (708) 255-1561
FAX: (708) 255-1699

Microelectronics and Reliability

This is a international journal and world abstracting service publication. It is published monthly plus 3 additional issues in January, May and September.

In North America contact:

Pergamon Press, Inc.
660 White Plains Road
Tarrytown, NY 10591-5153

Telephone: (914) 524-9200

From elsewhere contact:

Pergamon Press
Headington Hill Hall
Oxford OX3 0BW, U.K.

Telephone: (0865) 794141
FAX: (0865) 60285

Reliability Engineering and System Safety

This is a monthly international journal covering the application of reliability and probabilistic techniques in design. It deals with the choice of research programs and in inspection and maintainability of plant items or systems.

In North America contact:

Elsevier Science Publishers
Journal Information Center
52 Vanderbilt Ave.
New York, NY 10017

Telephone: (212) 916-1250

Elsewhere contact:

Elsevier Applied Science Publishers, Ltd.
Crown House, Linton Road, Barking
Essex IG11 8JU, England

Quality and Reliability Engineering International

This bi-monthly technical journal is designed to bridge the gap between existing theoretical methods and scientific research and current industrial practices. It concentrates on "high-technology" products, including both hardware and software.

Contact:

John Wiley & Sons Limited
Baffins Lane, Chichester
Sussex, PO19 1UD, England

Telephone: (0243) 770351
FAX: (0243) 775878

Air Force Journal of Logistics

Contact:

Department of the Air Force
Air Force Journal of Logistics
Air Force Logistics Management Center
Gunter Air Force Station, AL 36114-6693

Telephone: (205) 416-4511

DSN: 596-4511

SAE RMS Journal

The purpose of the SAE RMS journal is to continue to offer a forum for communication between RMS professionals, provide information on G-11 committee activities, discuss RMS activities in other associations/societies, and to present technical articles covering subjects such as R&D, theory and methodology, specifications and standards, education and training and applications and case studies as they impact RMS.

Contact:

Joe Davis
Journal Editor
Loral Vought Systems
PO Box 650003, MS EM-30
Dallas, TX 75265-0003

Telephone: (214) 266-7458

FAX: (214) 266-0182

The RAC Quarterly

The RAC Quarterly is an "informal professional journal" devoted to quality, reliability and maintainability. Each RAC Quarterly cover issues at the cutting edge of these disciplines from industry leaders and RAC's own experts. Papers and suggested topics are welcomed. The cost of an annual subscription is \$30 US.

Contact:

Reliability Analysis Center
201 Mill St.
Rome, NY 13440-6916
Michael J. Rossi (Deputy Director)

Telephone: (315) 339-7087

DSN: 587-4151

FAX: (315) 337-9932

NEWSLETTERS

RAC Newsletter

The RAC Newsletter brings reliability, maintainability, and quality information and techniques, announcements, and product information to a broad audience. A typical issue contains an in-depth feature article or case study, news about upcoming industry events, product announcements, a Technical Brief insert focusing on practical techniques, information about current RAC activities, and other items of interest.

The RAC Newsletter is published and distributed quarterly. It is mailed to a qualified list of more than 20,000 persons in military, other government, and commercial organizations. A subscription to the Newsletter is available free of charge to anyone working in reliability, maintainability, or quality.

Contact:

Reliability Analysis Center
201 Mill St.
Rome, NY 13440-6916
Michael J. Rossi (Deputy Director)

Telephone: (315) 339-7087

DSN: 587-4151

FAX: (315) 337-9932

Reliability and Maintainability Technology Transition Fact Sheet

This is a publication of the Systems Reliability Division, Electromagnetics and Reliability Directorate of the DoD's Rome Laboratory (RL). It is published semi-annually and is available without charge as a service to reliability professionals.

Contact:

Rome Laboratory
Attn: Anthony J. Feduccia
RL/ERS
525 Brooks Rd.
Griffiss AFB, NY 13441-4505

Telephone: (315) 330-4921

Autovon: 587-4921

RMS in Motion

RMS in Motion is the quarterly newsletter sponsored by the SAE G-11 RMS Committee. Each issue highlights special project activity by the various subcommittees, as well as important discussions by prominent professionals in the RMS field. Additionally, featured articles, symposium and calendar announcements and SAE G-11 product descriptions are contained.

Contact:

Jay D. Myers
SAE International
400 Commonwealth Dr.
Warrendale, PA 15096

Telephone: (412) 776-4841

CALCE News

CALCE News is a monthly newsletter which presents University of Maryland research activity highlights as well as other important RMS studies. CALCE Electronic Packaging Research Center (EPRC) is a state/industry/university cooperative research center sponsored by the National Science Foundation. CALCE EPRC has approximately 30 members with various technology backgrounds and capabilities.

Contact:

University of Maryland
CALCE EPRC
College Park, MD 20741

Telephone: (301) 405-5323

MAGAZINES AND OTHER PERIODIC PUBLICATIONS**Evaluation Engineering Magazine**

This is a helpful monthly magazine available free to qualified managers, supervisors and engineers in the electronics and related industries. Typical articles address electronic testing, quality control and quality assurance, design and development, research, manufacturing and production, receiving inspection, product assurance, field service, reliability, components, standards, and professional staffing issues.

Contact:

Evaluation Engineering
2504 North Tamiami Trail
Nokomis, FL 34275-3482

Telephone: (813) 966-9521
FAX: (813) 966-2590

Quality Progress Magazine

This periodical, published monthly by the ASQC and sent to all members, deals with ideas, methods, and tools for quality management.

Contact:

American Society for Quality Control
611 East Wisconsin Ave.
PO Box 3005
Milwaukee, WI 53201-3005

Telephone: (800) 248-1946 **in Wisconsin (414) 272-8575**

Test Engineering and Management Magazine

Test published monthly addresses a number of issues of interest to the reliability and quality community, including reliability demonstration and qualification testing, environmental test profiles, environmental stress screening, test equipment, testing services, etc.

Contact:

Test Engineering Management
3756 Grand Ave., Suite 205
Oakland, CA 94610

Telephone: (510) 839-0909
FAX: (510) 839-2950

RELIABILITY DATA PUBLICATIONS

MIL-HDBK-217 - Reliability Prediction of Electronic Equipment

MIL-HDBK-217 is a widely-used, authoritative document covering methods for prediction of failure rates for all types of electronic equipment, both military and commercial. This document is frequently referenced in military procurement specifications when standard reliability prediction methods must be applied to the item being produced.

Ordering information: MIL-HDBK-217

Contact:

Naval Publications and Forms Directorate (NPFD)
5801 Tabor Ave.
Philadelphia, PA 19120-5099

Telephone orders: (Industry) (215) 697-3217
(DoD Only) (215) 697-2626
FAX: (215) 697-2978
DSN: 442-2179

RAC Microcircuit Device Reliability Databooks

The RAC Microcircuit Device Reliability Databooks are an interrelated series containing field failure rate and trend information for microcircuits. MDR-21 investigates trends in reliability for various microcircuit types. MDR-21A is a two-volume companion to MDR-21 which provides the detailed field data from which MDR-21's trends analyses were derived. FMDR-21A makes available the data contained in MDR-21A in IBM-compatible diskette format, with built-in data retrieval tools.

Ordering information: MDR-21: U. S. \$100. MDR-21A: U. S. \$125

Contact:

Reliability Analysis Center
P.O. Box 4700
Rome, NY 13442-4700

Telephone: 1-800-526-4802
FAX: (315) 337-9932
DSN: 587-4151

Electrostatic Discharge Susceptibility Data (VZAP-91) and ESD Control in the Manufacturing Environment (SOAR-6)

VZAP-91, the Electrostatic Discharge Susceptibility Databook from the Reliability Analysis Center, contains electrostatic discharge susceptibility test and classification data for over 1600 microcircuits and 900 discrete devices. This data was compiled from manufacturers, test laboratories, and end users and is widely used throughout the industry to aid in part selection and determine appropriate ESD control procedures. The data is also available on IBM-compatible diskette with built-in data retrieval tools.

Another RAC publication, SOAR-6, "ESD Control in the Manufacturing Environment," recommends ESD control measures based on the data in VZAP-91.

Ordering information: VZAP-91: U. S. \$150; diskette version VZAP-91P U. S. \$400; SOAR-6: U. S. \$60.

Contact:

Reliability Analysis Center
P.O. Box 4700
Rome, NY 13442-4700

Telephone: 1-800-526-4802

FAX: (315) 337-9932
DSN: 587-4151

IEEE Standard 500 - "Reliability Data"

This document was specifically written to address the unique needs of the nuclear power generation industry. However, the failure rates information frequently has much broader application. For some classes of equipment this document contains the best available failure rate information.

Ordering information: IEEE Standard 500.

Contact:

IEEE Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331

Telephone:

Outside the US: (908) 981-0060
Inside the US: (800) 678-IEEE
FAX: (908) 981-9667

Non-Electronic Part Reliability Data (NPRD-91) and Non-Operating Reliability Data (NONOP-1)

These two documents address failure rates for unique types of parts (NPRD-91) and unique environments (NONOP-1) not covered by MIL-HDBK-217.

NPRD-91 provides failure rate and failure mode information for electrical, mechanical, electro-mechanical, hydraulic, and rotating devices and is a compilation of field experience in both military and industrial applications. This data is also available in IBM-compatible diskette form with built-in data retrieval tools.

NONOP-1 contains extensive nonoperating field and test data on an assortment of electronic and non-electronic parts. This data supports more accurate

prediction of devices and systems in storage than previous methods applying correction factors to operating failure rates.

Ordering information: NRPD-91, U.S. \$150; diskette version NRPD-91P: U.S. \$400. NONOP-1, U.S. \$150.

Contact:

Reliability Analysis Center
P.O. Box 4700
Rome, NY 13442-4700

Telephone: 1-800-526-4802

FAX: (315) 337-9932

DSN: 587-4151

Impact of Nonoperating Periods on Equipment Reliability (RADC-TR-85-91)

This document contains models to predict the quantitative effects of non-operating periods on electronic equipment reliability. This document is the classic reference for prediction of reliability in a non-operating environment. The models can be used to predict non-operating component failure rates for any anticipated environment except a satellite environment.

Ordering information: AD-A158843.

Contact:

National Technical Information Service
U. S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161-2171

Telephone:

General information: (703) 487-4600

To place an order: (703) 487-4650

Rush Service: (800) 553-NTIS

TDD: (703) 487-4639

FAX: (703) 321-8547

Bellcore Reliability Prediction Procedure

The Bellcore reliability prediction method is an alternate to that espoused in MIL-HDBK-217. It is a unique approach applicable to a very limited specific environment: continuously operating equipment in a ground benign environment with a fair degree of temperature and humidity control. The Bellcore prediction procedure can give more accurate results than MIL-HDBK-

217 for telephony and large main-frame computer installations but is not applicable to most other types of equipment.

Ordering information: TR-NWT-000332

Contact:

Bell Communications Research Inc.
60 New England Ave.
Piscataway, NJ 08854-4196

Telephone:

Outside the US: (908) 699-5800
Inside the US: (800) 521-CORE X2673
FAX: (908) 336-2559

Reliability Prediction Models for Mechanical Equipment

This prediction procedure, while similar in methodology to MIL-HDBK-217, is not based upon the same theoretical premise. It represents a unique and controversial approach to the prediction of failure rates for mechanical equipment. In certain situations it may provide the best available reliability estimate for some types of mechanical parts.

Contact:

Mr. Jim Chelsey
Naval Service Warfare Service Center
Commander CArderock Division
Code 129
Bethesda, MD 20084

or

Mr. Bill Skewis
Support System Technology Corp.
PO Box 7945
Gaithersburg, MD 20898-7945

Telephone: (301) 738-7123

Telephone: (301) 227-1709

RELIABILITY AND MAINTAINABILITY HANDBOOKS

A Primer for Reliability, Maintainability & Safety Standards (PRIM-92)

This RAC publication gives concise descriptions of thirty-seven military standards, specifications, and handbooks dealing with reliability, maintainability and safety. It provides a comprehensive overview of the most important military documents in the field. PRIM-92 contains a brief description of the content and purpose of each document, explains its significance to a program and/or program phase, lists any applicable data item descriptions (DID's), and briefly explains how to use the document. Where necessary PRIM-92 tells how to tailor a standard or specification's requirements. Documents unique to a specific branch of the military are so identified.

Ordering information: PRIM-92, U.S. \$120

Contact:

**Reliability Analysis Center
P.O. Box 4700
Rome, NY 13442-4700**

Telephone: 1-800-526-4802

**FAX: (315) 337-9932
DSN: 587-4151**

MIL-HDBK-338 - Electronic Reliability Design Handbook

This Handbook describes a comprehensive methodology covering all aspects of electronic system reliability design. Acquisition and deployment considerations for DoD equipment/systems, as they relate to equipment design, are addressed. The document contains up-to-date, practical guidelines for use by design engineers, reliability engineers, and managers. The handbook also includes a comprehensive list of reference material.

The handbook emphasizes the practical aspects of R/M design and management techniques and gives the reader insight into how the techniques are applied. Users are guided through design, production, and deployment of reliable and maintainable military electronic systems at minimum life cycle cost. The intent of the handbook is to provide sufficient theoretical and practical information to solve frequently encountered reliability problems .

Ordering information: MIL-HDBK-338

Contact:

**Naval Publications and Forms Directorate (NPPD)
5801 Tabor Ave.
Philadelphia, PA 19120-5099**

Telephone:

**General assistance (215) 697-2179
Ordering documents: Industry (215) 697-3217
DoD Only: (215) 697-2626
FAX: (251) 697-2978
DSN: 442-2179**

RL Reliability Engineer's Toolkit

This Rome Laboratory publication is intended for use by practicing reliability and maintainability engineers. Not a complete tutorial or technical treatment of the R&M discipline, the Toolkit is rather a compendium of useful R&M reference

information to be used in everyday practice. Emphasis is placed on the role of the reliability engineer in the various R&M activities of an electronic systems development program.

Contact:

Reliability Analysis Center
PO Box 4700
Rome, NY 13442-4700

Telephone: 1-800-526-4802
FAX: (315) 337-9932
DSN: 587-4151

Microelectronic Failure Analysis Techniques (MFAT-1) and GaAs Microcircuit Characterization and Failure Analysis Techniques (MFAT-2)

Destructive failure analysis of defective electronic parts in the laboratory often provides the key to solution of a difficult reliability problem. These RAC publications are detailed procedural guides for the establishment and operation of a cost-effective failure analysis laboratory. They can serve as tools for the beginning failure analyst and as a convenient reference for experienced analysts and other professionals in the semiconductor industry, such as quality and reliability project engineers. The two volumes describe the most effective failure analysis techniques being used by industry leaders.

MFAT-1 addresses testing of silicon technology devices. MFAT-2 is similar in structure and content, but deals with the unique considerations of gallium arsenide (GaAs) technology.

A partial listing of the some of the specific techniques described includes: fault isolation, radiography, package ambient gas analysis, infrared thermal mapping, liquid crystal analysis, surface topography measurement, optical analysis, metallurgical analysis, scanning acoustical microscopy, and microbeam analysis.

Ordering information: MFAT-1: U.S. \$140. MFAT-2 U. S. \$100
Both U. S. \$200.

Contact:

Reliability Analysis Center
P.O. Box 4700
Rome, NY 13442-4700

Telephone: 1-800-526-4802
FAX: (315) 337-9932
DSN: 587-4151

Analysis Techniques for Mechanical Reliability (NPS)

This RAC publication presents modern analysis techniques for the reliability assessment of nonelectronic equipment. It includes an extensive discussion of quantitative techniques used for determining the reliability of mechanical parts and systems. This allows meaningful trade-off studies to be implemented to assess the effect on performance, cost, size, safety, and weight of various designs.

Ordering information: NPS U.S. \$75

Contact:

Reliability Analysis Center
P.O. Box 4700
Rome, NY 13442-4700

Telephone: 1-800-526-4802

FAX: (315) 337-9932
DSN: 587-4151

Guide to Government Reliability, Maintainability and Quality Assurance Organizations - RADC-TR-83-49

Many agencies within the United States government perform various functions related to reliability, maintainability, and quality assurance. This RADC document, published in 1983, is a guide to ninety specific Air Force, Army, Navy, NASA, and FAA organizations which provide significant ongoing reliability, maintainability and quality assurance functions.

Ordering information: AD-A130465

Contact:

National Technical Information Service
U. S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161-2171

Telephone:

General information: (703) 487-4600
To place an order: (703) 487-4650
Rush Service: (800) 553-NTIS
TDD: (703) 487-4639
FAX: (703) 321-8547

How To Get It - A Guide to Defense-Related Information Resources

How To Get It - A Guide to Defense-Related Information Resources is a reference tool to identify and/or acquire government published or sponsored documents,

maps, patents, specifications or standards and other resources of interest to the defense community.

Entries are arranged alphabetically in a single dictionary listing, by document type, source, acronym, series designation, or short title. Each entry consists of an identification of the item and detailed acquisition information such as source, order forms necessary, if there is a cost, where it is indexed, and telephone numbers for additional information.

Contact:

Crystal Ashton
Charles Reed

Defense Technical Information Center
DTIC-OS
Cameron Station
Alexandria, VA 22304-6145

Telephone: (703) 617-7931
DSN: 667-7931

Directory of Factual and Numeric Databases of Relevance to Aerospace and Defence R&D

This directory contains information on nearly 100 unclassified factual or numeric databases of potential interest to aerospace and defense research and development. Information given in this directory includes the name of the organization and a point of contact, the title of the databank and the type of data included, a description of its coverage, information on the form of output available, and details of software used. The directory is listed in order by NASA subject category and was sponsored by the Technical Information Panel of AGARD.

Contact:

Advisory Group for Aerospace Research and Development
North Atlantic Treaty Organization
7 Rue Ancelle, 92200 Neuilly sur Seine
France

Reliability, Availability, and Maintainability (RAM) Dictionary

This volume is a compilation of definitions of terms used in the reliability, availability, and maintainability field. It distinguishes between various usages of terms used by reliability engineers working in various product environments. Many terms are not found in standard dictionaries.

Author: Norman B. Fuqua, Copyright 1987, \$99.75

Contact:

Marcel Dekker, Inc.
PO Box 5019
Monticello, NY 12701

Telephone: (800) 228-1160

Methods for Statistical Analysis of Reliability and Life Test Data

This text provides the graduate level student and/or the professional reliability engineer with a comprehensive source of available statistical methods commonly applied in reliability work.

Authors: Nancy R. Mann, Ray E. Schafer, Nozer D. Singpurwalla,
Copyright 1974, \$93.95

Contact:

John Wiley & Sons, Inc.
Number 1, Wiley Drive
Somerset, NJ 08875

Telephone: (212) 850-6000 (Ask for Customer Service)

SPECIFICATIONS AND STANDARDS

Data Item Description (DID)

DoD 5010.12-L, Acquisition Management System and Data Requirements Control List (AMSDL), is the source for obtaining information on DIDs.

Contact:

For ordering the AMSDL and individual DIDs:
DoDSSP
Subscription Service Desk
Building 4D
700 Robbins Avenue
Philadelphia, PA 19111-5094

Telephone: Customer Service: (215) 697-2179

Specifications and Standards, Military

- ML or ML-SPEC - Military Specification
- MIL-STD - Military Standard
- MS - Military Standard Drawing
- Specifications and standards originated by the Naval Air Systems Command (NAVAIR) include the following series among others:
- ABCA Navy STD - Navy International Standard Agreement between the Navies of the United States, the United Kingdom and Canada
- ANC Bulletins - Air Force-Navy Civil Committee on Aircraft Design Criteria Bulletin
- AR - Aeronautical (Aircraft) Requirement
- AS - Aeronautical Specification
- EI - Electronic Instruction
- ET - Electronic Instruction
- NAF - Naval Air Factory Drawing
- SAR - Special Aeronautical Requirement

Government agencies may request free automatic distribution according to the Federal Supply Classification. Please order through channels or request from Naval Publications and Printing Detachment Office. Commercial firms may request a subscription (automatic distribution) of specifications and standards at a cost of \$10.00 for each Federal Supply Class requested. For information write:

Naval Publications and Printing Detachment Office
700 Robbins Avenue
Philadelphia, PA 19111

The National Standards Association, Inc. (NSA), a distributor of national aerospace standards, has available for purchase the AN's (Air Force-Navy Aeronautical Standards), AND's (Air Force-Navy Design Standards), MS's (Military Standards) and other documents listed in DODISS. See entry under AN, AND and MS Index.

Contact:

Standardization Documents Order Desk (SDOD)
Building 4D - Customer Service
700 Robbins Avenue
Philadelphia, PA 19111-5094

or

National Standards Association, Inc. (NSA)
1200 Quince Orchard Boulevard
Gaithersburg, MD 20878

Telephone:

Specifications and Standards (215) 697-2179, DSN 442-2179;
Customer Service (215) 697-2626, DSN 442-2626
NSA (301) 590-2300, Outside of Maryland (800) 638-8094
NAVAIR Specs & Stds Section (703) 692-7690

Specifications and Standards, Industry

Commercial specifications and standards are published and distributed by a variety of national standardization organizations. ANSI acts as the sole agent in the United States for the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC); catalogs are available from ANSI for the ISO and for the IEC. Guide to Federal Supply Classification, a handy guide on how to identify and order DODISS documents, is available free from NSA. See also entries under the indexes cited above.

Contact:

Standardization Documents Order Desk (SDOD)
Building 4D - Customer Service
700 Robbins Avenue
Philadelphia, PA 19111-5094

American National Standards Institute (ANSI)
1430 Broadway
New York, NY 10018

Institute of Electrical and Electronic Engineers (IEEE)
345 East 47th Street
New York, NY 10017

American Society for Testing and Materials (ASTM)
1916 Race Street
Philadelphia, PA 19103

Electronic Industries Association, Inc. (EIA)
Engineering Department
2001 Eye Street, N.W.
Washington, DC 20006

National Standards Association, Inc. (NSA)
5161 River Road
Washington, DC 20016

Society of Automotive Engineers, Inc. (SAE)
400 Commonwealth Drive
Warrendale, PA 15096

Telephone:

Specifications and Standards: (215) 697-2179, DSN 442-2179
Customer Service: (215) 697-2626, DSN 442-2626
ANSI: (212) 354-3300
ASTM: (215) 229-5400
EIA: (202) 457-4966
NSA: (301) 590-2300, Outside of Maryland (800) 638-8094
IEEE: (212) 644-7910
SAE: (412) 776-4841

CHAPTER THREE - NUMERICAL DATABASES

AIR FORCE DATABASES

G063: Maintenance and Operational Data Access System (MODAS)

MODAS is the primary maintenance data collection system within the U. S. Air Force. It contains collected maintenance activity data on Airborne and Ground-based systems at the organizational, intermediate, and (to a lesser extent) depot level of maintenance. It is one of the most comprehensive databases available in the Air Force and covers all aircraft currently in the inventory. Part level data is generally not available from MODAS.

MODAS receives information from the following data sources:

- DO56A Edit and Error Analysis Subsystem of Product Performance Systems
- DO56B On-Equipment Analysis System of Product Performance Systems
- DO56C Off-Equipment Analysis System of Product Performance Systems
- DO56E Maintenance Data to Contractors (MDC)
- DO56T Reliability and Maintainability Analysis
- GO26 Material Improvement Program
- GO33B Aerospace Vehicle Inventory, Status and Utilization Reporting
- GO33H Trainer Equipment Inventory, Status, and Utilization Reporting

Accessibility: MODAS is available to all organizations that have a valid contract with DoD.

Contact:

Mr. Frank Ferguson
HQ-AFMC/ENIT
4375 Chidlaw Road, Suite #6
Wright-Patterson AFB, OH 45433-5001

Telephone: (513) 257-5078

DSN: 787-5078

Reliability and Maintainability Information System (REMIS)

As planned, REMIS will serve as the central common source of all unclassified maintenance, operational, configuration and selected supply information for

USAF weapon systems. It will eventually replace MODAS, GO33, and many other antiquated, interim, or unique data systems.

Access: REMIS will provide on-line data access to any qualified data users using a PC-compatible terminal via dial-up modem. It is being brought on-line in various stages.

Contact:

REMIS Program Office, SPO
HQ MSC/SR
Wright-Patterson AFB, OH 45433

Telephone: (513) 429-6400
DSN: 787-5076

Technical Interim CAMMS and REMIS Reporting System (TICARRS)

TICARRS is a reporting system specific to the F-15E and F-16A/B/C/D aircraft. It was previously known as Central Data System (CDS).

This system gathers data from the MDC and CAMMS system. It reports on aircraft inventory, utilization, and maintenance for F-15E and F-16 aircraft. It provides the same type of information as MODAS and MILAP, but its information is more up-to-date and more reliable. TICARRS is currently being phased out in favor of REMIS.

Accessibility: TICARRS is available to all organizations that have a valid contract with DoD.

Contact:

Ray Pruett or Joe Granger
Dynamics Research Corporation
60 Frontage Road
Andover, MA 01810

Telephone: Ray: (508) 475-2395
Joe: (508) 475-2612
FAX: (508) 474-1807

Maintenance and Information Logically Analyzed and Produced (MILAP)

This data system is devoted to Tactical Air Command (TAC) weapon systems. For these systems it contains the same type of information that is available from MODAS or TICARRS.

Contact:

Langley AFB, VA 23665

Telephone: (804) 764-3685

FAX: (804) 764-3924

DSN: 574-3924

Smart Data System (SDS)

The Smart Data System (SDS) is an on-line interactive aircraft (F-117A) maintenance information management, reporting and analysis system. SDS supports all maintenance levels: organizational, intermediate, depot, staff and contractor. SDS collects data on the weapon system and its test equipment through a network of on-line terminals located in maintenance areas, such as Maintenance Operations Center (MOC), Analysis and Production Control. The start data systems was developed by Dynamics Research Corporation (DRC) to support the F-117A Stealth Fighter.

SDS integrated data from the following Air Force systems:

- Maintenance Management Information Control System (MMICS)
- Maintenance Data Collection (MDC) System

Contact:

**Joe Granger
Dynamic Research Corporation
60 Frontage Rd.
Andover, MA 01810**

Telephone: (508) 475-2612

FAX: (508) 474-1807

GO21: Deficiency Report Tracking System (DRTS)

This system provides uniform procedures for assuring that the quality deficiency data generated by using activities are effective and that appropriate management levels are apprised of quality problems.

Contact:

**Ms. Joan Nuss
Department of Air Force
4375 Chidlaw Road, Suite #6
HQ AFMC/ENIT
Wright-Patterson AFB, OH 45433-5000**

Telephone: (513) 257-6021
DSN: 787-6021
DDN: 26.18.0.47 or 26.17.0.176

G033: Aerospace Vehicle and Equipment Inventory, Status, and Utilization Reporting (AVISURS)

This data system provides inventory, status, and utilization reporting for aircraft, selected missiles, and trainers used by the Air Force, Air National Guard, Air Force Reserve, and government plant representatives assigned to commercial facilities to represent the U. S. Air Force.

Contact:

Gary Siroshton
Department of Air Force
TIC/XRCD

DSN: 596-2011

Visibility and Management of Operating and Support Costs Program (VAMOSC)

This program provides the capability to gather, portray, and retain for historical reference the operating and support cost resources (labor, material, services, and overhead) directly and indirectly associated with the Logistics Support of aircraft and ground communications-electronics systems. It is comprised of three reporting systems: Weapons System Support Cost (WSSC) System for airborne equipment, Ground Communications-Electronic (C-E) system, and Component Support Cost System (CSCS) which includes direct and indirect maintenance and overhead costs for aircraft components.

Access: These three databases and their reports are unclassified and no privacy restrictions exist.

Contact:

Don Romie or Glen Calhoun
Department of Air Force
HQ AFCAA/ISM
Wright-Patterson AFB, OH 45433-5000

Telephone: (513) 257-4963
DSN: 787-4963

DO41: Recoverable Consumption Item Requirements Tracking System

This system is devoted mainly to non-avionic parts.

Contact:

Mr. Ronald Rosenthal
Department of Air Force
HQ AFMC/XRII
Wright-Patterson AFB, OH 45433

Telephone: (513) 277-5313

DSN: 787-5313

CORE Automated Maintenance System (CAMS)

CAMS applies to Air Force units engaging in maintenance of aircraft, missiles, munitions, communication and aerospace ground equipment. DOC AFM 66-279, DSD: G054/FS

Contact:

Msgt. Robert L. Vernon
US Air Force
SSC/AQMDF
Washington, DC 20300-5000

Telephone: DSN: 446-3418

Peacekeeper Integrated Assessment Data Systems**Peacekeeper Information Retrieval System (PIRS)**

Software requirements specification for the Peacekeeper Guidance and Control Configuration, Failure and Repair (G&C-CFAR) data base is to provide the system program managers and assessment personnel with a data base system capable of maintaining and performing integrated assessment on the configuration of a guidance and control system, its components and its associated failure and repair history.

Contact:

Attn: Don Butcher
US Air Force
OO ALC/LMAGR
Hill AFB, UT 84056

Prepared by:

Rockwell International
Data Systems Engineering Group
GCCD-SRS-1

NAVY DATABASES

3M: Maintenance, Material, Management System (Ships)

3M is a mass-data collection system which tracks maintenance information at the organizational and intermediate levels on all types of equipments and assemblies used on Navy ships and submarines . The 3M system is comprised of two subsystems, one dealing with Planned Maintenance (PMS) and the other dealing with corrective maintenance and configuration data (MDS).

Contact:

Ms. Donna Shaver
Naval Sea Logistics Center
Code 601
Mechanicsburg, PA 17055

Telephone: (717) 790-4743
DSN: 430-4743

3M: Maintenance, Material, Management System (Avionics)

This is a mass data collection system that tracks maintenance information on all naval avionics systems for all aircraft in the U. S. Navy. 3M is very similar in operation to the U. S. Air Force MODAS system and offers many more reliability, maintainability, and logistics reports than MODAS.

Access: At this writing 3M is undergoing a major update, and access privileges for all accounts are being reevaluated. As new accounts are added, contractors will be considered last. Obtaining permission is possible, though approval may take an extended period of time.

Contact:

Ms. Donna Shaver
Naval Sea Logistics Center
Code 601
Mechanicsburg, PA 17055

Telephone: (717) 790-4743
DSN: 430-4743

Naval Aviation Logistics Data Analysis System (NALDA)

NALDA is an interactive, integrated database containing logistics data and analysis capability for fleet aircraft readiness. It is designed to enhance Integrated Logistics Support and the "Reliability Centered Maintenance" concept.

NALDA can be accessed by remote dial-up terminals and has on-line query capability.

Access: There are restrictions on the use of NALDA. DoD contractors must meet security requirements and have approval from their government sponsor to gain access to NALDA. Access will be permitted only for those specific purposes requested by the contractor on NALDA Access Form supported by the contract SOW. Requesters must also have completed formal NALDA training, be scheduled to attend an upcoming NALDA course, or demonstrate proficiency in the use of NALDA.

Contact:

Naval Aviation Maintenance Office
Code 424
Patuxent River, MD 20670-5446

Telephone: (301) 826-4454
DSN: 326-4454

ARMY DATABASES

Troop Support Sample Data Collection (TSSDC) – Troop Support Command (TROSCOM)

Troop Support Sample Data Collection (TSSDC) is a data collection system which tracks a sample of equipments at a sample of locations, for a sample time period. It does not collect comprehensive maintenance information on a continuous basis.

Contact:

US Army Troop Support Command
Sample Data Collection
AMSAT-I-MDC
4300 Goodfellow Blvd.
St. Louis, MO 63120-1798

Telephone: (314) 263-2734
Autovon: 693-2734

Work Order Logistics File (WOLF)

WOLF is a mass data collection system containing system and piece part replacement data for Army fielded systems.

Access: WOLF is not available to contractors unless they have a DoD contract and are approved by HQ-AMC.

For database access approval contact:

Commander
Headquarters US Army Material Command
Attn: AMCSM-MMS
5001 Eisenhower Ave
Alexandria, VA 22333-0001

To access WOLF following approval contact:

Tom Ress or Paul Powell
USAMC Material Readiness Support Activity
Attn: AMXMD-RA
Lexington, KY 40511-5101

Telephone: Mr. Ress (606) 293-3690
Mr. Powell (606) 293-3601
DSN: 745-3690

USAMC Material Readiness Support Activity Deficiency Reporting System

Contact:

USAMC Material Readiness Support Activity (MRSA)
Attn: AMXMD-RA
Lexington, KY 40511-5101

Telephone: (606) 293-3479 or 3082
DSN: 745-3479

Reliability, Availability, Maintainability and Logistics Data Base for Army Aircraft (RAM/LOG)

Contact:

The Army Aviation System Command
Methodology Branch
4300 Goodfellow Blvd.
St. Louis, MO 63120

Data Request:

Army Aviation System Command
Customer Interface Branch
Attn: Walter Stim
AMSAT-I-MDO
4300 Goodfellow Blvd.
St. Louis, MO 63120

Telephone: (314)263-2734

Program Set-Up

Army Aviation System Command
Methodology Branch
Attn: Roger Hoffman
AMSAT-I-MDM
4300 Goodfellow Blvd.
St. Louis, MO 63120

Telephone: (314) 263-1758

MARINE CORPS DATABASES**MIMMS Marine Corps Integrated Maintenance Management System - Automated Information Systems MIMMS-AIS**

MIMMS is a mass data collection system which tracks maintenance information at all levels for all types of equipments and assemblies used in Marine Corps vehicles and aircraft.

Contact:

Marine Core Logistic Data Base
Attn: Capt. Rudy Webber
Maintenance Data Analysis
Code 804-1
Albany, GA 31704-5000
Telephone: (912) 439-6651
DSN: 567-6651
FAX: (912) 439-6569

OTHER GOVERNMENT DATABASES

Department of Defense (DoD) Gateway Information System (DGIS)

The DoD Gateway Information System (DGIS), became operational in October 1988. DGIS offers convenient access to hundreds of commercial and government databases. It provides on-line, streamlined methods for identifying, accessing, searching, and analyzing data from heterogeneous databases of interest to the DoD community. DGIS connects you to a database of your choice from a menu screen, and DGIS automatically dials the phone number, supplies your personal account information, and logs you onto the system, ready to start your search. DGIS saves time by enabling you to simultaneously search multiple databases and can simplify the search with SearchMAFSTRO.

A Common Command Language (CCL), which will allow you to do sophisticated searching in different databases using one retrieval language, is being developed. CCL will interface with DROLS, NASA-RPCON, Dialog, BRS, and Orbit, and is expected to be available in November 1992. Search results can be saved by means of the download feature which enables you to create your own DGIS files of bibliographic citations. Downloaded citations may be manipulated and analyzed by the powerful post-processing commands. These include merging results from two or more databases and eliminating duplicate citations. Other post-processing features can be utilized with the merged file, such as: review, sorting, indexing, field correlation, and an attractively formatted bibliography can be prepared. DGIS also offers, through GENIUS, the capability of placing orders with an information broker (Information on Demand) for various types of documents regardless of subject, date, or publication type. Other capabilities, such as electronic mail and editing are available.

Contact:

Defense Technical Information Center
ATTN: DTIC-BCP
Bldg. 5
Cameron Station
Alexandria, VA 22304-6145

Telephone: (703) 274-6434
DSN: 284-6434

DTIC Defense RDT&E On-line System (DROLS)

This system is a network of remote terminals linked to DTIC's central computer providing on-line access to the data from the four major databases: The Technical Reports (TR) Database, The Work Unit Information System (WUIS), the Program Element Descriptive Summaries (PEDS) Database, and the Independent Research and Development (IR&D) Database. Each of the databases is discussed in more detail in a separate entry for each title. The Network Services Branch provides support for on-line system users-training and problem-solving. At this time there are four regional offices around the United States which offer search services to registered users who do not have a terminal in-house. See DTIC Regional Offices for more information. Interested prospective contractors and grantees should also call the Special Programs Branch (703) 274-3848, (703) 274-6902 or DSN 284, to learn about the special programs for those who do not have a current contract or grant with DoD. See also information under the University Research Initiative (URI), Small Business Innovation Research (SBIR), and Historically Black Colleges and Universities (HBCU) Programs in this directory. This service is available to all DTIC registered users. Bibliographies will be prepared by the DTIC Retrieval staff on demand, from any of the databases. See each title for complete ordering instructions.

Contact:

Defense Technical Information Center (DTIC)
DTIC-BLN
Bldg. 5
Cameron Station
Alexandria, VA 22304-6145

Telephone: DTIC-BLN: (703) 274-7791 or DSN 284-7791
DTIC General Information: 1-800-225-DTIC (3842)

Government-Industry Data Exchange Program (GIDEP)

GIDEP (see entry under "Governmental Organizations" above) provides a central, on-line facility for storage of engineering, reliability, and failure experience data. This resource comprises four major databases, each with a number of interrelated data tables:

- Engineering Data Interchange
- Failure Experience Data Interchange
- Reliability-Maintainability Data Interchange
- Metrology Data Interchange

Three particularly useful resources offered by GIDEP are its "Alert", "Urgent Data Request" and "Diminishing Manufacturing Sources" storage and search facilities. The "Alert" system provides identification and notification of actual or potential problems on parts, components, material, manufacturing processes, test

equipment, or safety conditions. The "Urgent Data Request" system permits any participant with a technical problem to rapidly access the scientific and engineering expertise of participant organizations. The "Diminishing Manufacturing Sources" system provides advance notice from device manufacturers about devices which will soon cease production and which will no longer be available for spares and inventory support.

Access: There are no direct financial obligations associated with participation in GIDEP. GIDEP participation requirements are outlined in MIL-STD-1556. Commercial access is limited in some cases to protect proprietary interests. On-Line computer query capability is available.

Contact:

GIDEP Operations Center
PO Box 8000
Corona, CA 91718-8000

Telephone:

Help Desk: (909) 273-4677
Computer Help Desk: (909) 736-4543
DSN: 933-4677

Directory of DoD R&D Data Bases

This DTIC publication, published in September, 1984 is a listing of DoD's R&D data bases. Each entry contains a description, dates of coverage, points of contact, and host hardware/software configuration. Agency, database, and subject indices are provided. The subject coverage includes meteorology, weapon systems, hazardous materials, medicine, oceanography, antennas, survivability, reliability, and chemistry. The order number for this document is: AD-B085 600, DTIC/TR-84/4

Contact:

Defense Technical Information Center (DTIC)
DTIC-BCR
Building 5, Cameron Station
Alexandria, VA 22304 6145

Telephone: (800) 225-3842
(703) 274-7633
DSN: 284-7633

RAC Reliability Databases

The Reliability Analysis Center (see entry under "Governmental Organizations" above) conducts an aggressive ongoing data collection effort. Data sources from

both government and private industry include organizations involved in research, development, production, quality assurance, reliability and deployment of electronic systems and components. This effort includes a major thrust to collect data from unpublished sources, particularly equipment and systems development and procurement programs and field operating installations. The RAC maintains comprehensive and current data resources in the following areas:

- Microelectronic devices, including all technologies (such as bipolar, MOS and hybrids) and configurations (such as digital, linear, interface, LSI, memory, and microprocessor).
- Discrete semiconductors, including selected state-of-the-art technologies such as microwave devices, opto-electronic devices, LEDs, solid state relays, transistors, and diodes.
- Selected electromechanical and mechanical components such as bearings, actuators, brakes, compressors, valves, switches, relays, connectors, generators, motors and blowers, pumps, heat exchangers, etc., that are particularly vulnerable to reliability problems.
- Systems and equipments in which these components are used.

Access: RAC data resources are available through the purchase of specific RAC publications or their PC-readable diskette equivalents. State-of-the-Art reports, Critical Reviews and Technology Assessments are published to keep the readers abreast of current issues and technologies which impact reliability performance. RAC can also produce tailored data summaries and analyses to meet customer requirements.

Contact:

Reliability Analysis Center
201 Mill St.
Rome, NY 13440-6916
Michael J. Rossi (Deputy Director)

Telephone: (315) 339-7087
DSN: 587-4151
FAX: (315) 337-9932

JPL/NASA Ground Test Radiation Data Bank (RADATA)

This database is sponsored by the NASA Office of Safety, Reliability, Maintainability and Quality Assurance and is carried out by the JPL Electronic Parts Reliability Section.

The JPL/NASA electronic data bank called "RADATA" consists of total-dose and Single Event Effects (SEE) ground based test data available for government and industry use. The data bank is accessible via personal computer/terminal at no cost to the user. The data bank is completely menu driven and permits the user to pursue the table of contents, view data, and download to their disk drive if desired. Also, data can be requested and received by U.S. postal mail, TELNET or DECnet.

Contact:

Keith Martin (818) 354-0319
Sam Farmanson (818) 354-1988

Telephone Access: (818) 393-4360 or 4156

LESSONS LEARNED

The Lessons Learned Program provides a record of experiences (positive and negative) from past and present programs and systems to facilitate new research. These recorded experiences are available by request to the Lessons Learned staff or through on-line access.

The applications of lessons is aimed at program improvement. For the Next Generation Trainer and Advanced Tactical Fighter, groups of lessons addressing the programs' conceptual phase were provided. A B-1 package was built around full-scale engineering development. Use of these lessons will ensure that informed decisions are made without repeating past mistakes.

These lessons are maintained in the computerized Air Force Lessons Learned Data Base and cover such topics as accessibility, base stock levels, computer software, data rights, engines, packaging, support equipment, etc.

The data base is open to all US Government employees and qualified contractors. To date, CSTI has received an enthusiastic response from industry, particularly in the area of system/equipment design.

Contact:

Bob Kerr
CSTI/AM
Wright-Patterson AFB, OH 45433-5000

Telephone: (513) 255-3454
DSN: 785-3454
FAX: (513) 255-4102

After Hours Answering Machine: (513) 255-5238

ON-LINE SEARCH SERVICES

SearchMAESTRO

SearchMAESTRO is an on-line search service sponsored by the Defense Technical Information Center (DTIC) for the Department of Defense (DoD). It is designed to assist on-line searchers, both end-user and intermediaries, locate relevant on-line information, without needing to know how to structure a search in different, individual databases or systems. Managers, researchers, bench scientists, librarians, and technical information specialists, by using a series of structured menu screens, are able to search over 800+ databases covering a wide range of subjects in an easy-to-use, uniform manner. SearchMAESTRO either lets you select the database or chooses the database for you.

SearchMAESTRO is a customized version of a commercial system called EasyNet[©]. Like EasyNet[©], SearchMAESTRO accesses many commercial information sources such as: BRS Information Technologies; DataStar-, DIALOG Information Services, Inc.; NewsNet, Inc.; ORBIT Search Service; Questel, Inc.; and The H. W. Wilson Company. What makes SearchMAESTRO unique is the capability to search DTIC's Defense RDT&E Online System (DROLS) Technical Report (TR) database, the Work Unit Information System (UIS) database, and other restricted government databases. For the most part, users of SearchMAESTRO do not need individual accounts and passwords with each database vendor. The one exception is DTIC; an unclassified dial-up DROLS password is required. SearchMAESTRO also has an on-line assistance feature, called SOS, which connects users with DTIC search experts for questions concerning searches of DTIC's databases. An automatic SCAN of Government sponsored databases is also available only on SearchMAESTRO.

Contact:

Defense Technical Information Center (DTIC)
ATTN: DTIC-BCP
Bldg. 5, Cameron Station
Alexandria, VA 22304-6145

CHAPTER FOUR - ELECTRONIC BULLETIN BOARDS

DoD BULLETIN BOARDS

Standard Military Drawing Program (SMDP) Remote Bulletin Board System (RBBS) - DESC

This service provides the latest information on all standard military drawings under the control of Defense Electronics Supply Center (DESC).

Access: The bulletin board is available via dial-up modem 24 hours a day/7 days a week. 9600 or 2400 baud, no parity, 8 bit data word, 1 stop bit, full duplex.

Contact:

Defense Electronics Supply Center (DESC)
Attn: Cindy Prich
DESC-ECC
Dayton, OH 45444-5279

Telephone Access: SMDP-RBBS (513) 296-6046 (24 Hrs.)

9600 Baud: (513) 296-8875

2400 Baud: (513) 296-6046

Comments or questions: Ron Couch
DECS/ECS

Telephone: (513) 296-6347

FAX: (513) 296-8869

Field Failure Return Program (FFRP)

There have been a lot of questions regarding efforts being performed by the FFRP and the status of the DoD program. The FFRP Reliability Bulletin Board System will provide answers to these questions while at the same time provide a vehicle for both commercial and government users to exchange ideas and information on component and system problems. An encapsulated guide to accessing the FFRP Reliability Bulletin Board System is provided below. This bulletin board, which operates 24 hours/day resides on an IBM microcomputer under RBBS software. Initially users who log on to this system will receive limited access privileges. After a user has been verified by the system administrator additional user privileges will be added.

Membership to the bulletin board is open to government and commercial agencies. Every user acknowledges that all information obtained from the bulletin board is provided "as is" without warranty.

The bulletin board is currently configured to allow each user 60 minutes on-line access during any one session (this may change in the future depending on system demands). The system will log-off users who remain idle for three minutes. An example of a typical log on procedure follows. New users will be prompted for further information to record personal preferences and machine individualities. If you have any questions or concerns regarding this bulletin board system leave a message on the system for the sysop.

Contact:

Donald Rash
Reliability Analysis Center
PO Box 4700
Rome, NY 13442-4700

Telephone: (315) 339-7043

FAX: (315) 337-9932

DSN: 587-4151

IEEE Reliability and Computer Society BBS

The LA Reliability & Computer Society Chapters have established a service for IEEE members and affiliated computer and product assurance societies (i.e., ACM, ASCQ, etc.) which provides videotapes of technical meetings, seminars and tutorials that are presented in the LA area. Members of IEEE and other engineering societies who may not be able to attend presentations now will have an opportunity to view the presentations at their convenience. The cost to join is \$20. First tape is free. Each exchange is a nominal fee: \$5. Tapes may be copied. Please include society name and membership number with each order.

A list of currently available library and related data may be viewed on-line on the IEEE Computer Society and Reliability Bulletin Board with a 300-2400 baud modem at (818) 768-7644.

APPENDIX A
RAC PRODUCTS

RAC Product Order Form

Ordering Code

Time

Page
1

U.S.
Pics

Non-US
Price

8

Item Total

Concurrent Engineering Series

ITCE	Introduction to Concurrent Engineering	3	\$75	\$85		
WCCA	Worst Case Circuit Analysis Application Guidelines	3	\$75	\$85		
FMECA	Failure Mode, Effects and Criticality Analysis	3	\$75	\$85		
FTA	Fault Tree Analysis Application Guide	3	\$75	\$85		

Data Publications

FMD	Failure Mode/Mechanism Distributions	4	\$100	\$120		
NPRD	Nonelectronic Parts Reliability Data	4	\$150	\$170		
TSMD	Environmental Characterization Device Sourcebook	4	\$100	\$120		
NONOP-1	Nonoperating Reliability Databook *Price Reduced*	4	\$50	\$60		
VZAP	Electrostatic Discharge Susceptibility Data	4	\$150	\$170		
MDR-22	Microcircuit Screening Analysis *Price Reduced*	4	\$50	\$60		

Application Guidelines

RMST-93	Reliability & Maintainability Software Tools	6	\$50	\$60	
PRIM	A Primer for DoD Reliability, Maintainability, Safety & Logistic Standards *Price Reduced*	6	\$100	\$120	
TEST	Testability Design and Assessment Tools	6	\$50	\$60	
RDSC	The Reliability Sourcebook - "How and Where to Obtain R&M Data and Information"	6	\$50	\$60	
SOAR-4	Confidence Bounds for System Reliability	6	\$50	\$60	
SOAR-6	ESD Control in the Manufacturing Environment *Price Reduced*	6	\$50	\$60	
SLEA	Service Life Extension Assessment	6	\$50	\$60	
TOOLKIT	RL Reliability Engineer's Toolkit - 2nd Edition	7	\$12	\$22	
RMIMP	Reliability & Maintainability Implications of DoDLM 5000.1, 5000.2	7	\$50	\$60	
NPS	Mechanical Applications in Reliability Engineering	7	\$100	\$120	
QREF	RAC Quick Reference Guides *Price Reduced*	7	\$25	\$35	
RCM	Reliability Centered Maintenance (RCM) Handbook	7	\$75	\$85	
STATS	Practical Statistical Analysis for Reliability - 2nd Edition	7	\$100	\$120	

Component Publications

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PEM	Plastic Microcircuit Packages: A Technology Review	8	\$50	\$60	
ATH	Analog Testing Handbook	8	\$100	\$120	
MFAT-1	Microelectronics Failure Analysis Techniques: A Procedural Guide *Price Reduced*	8	\$70	\$80	
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